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ABSTRACT

This reference manual provides practical strategies for teaching a wide range of study skills at the elementary and secondary grade levels. Following a brief introduction, the manual presents an overview of study skills and strategies for various content areas and grade levels. The next section discusses guidelines for developing a study skills program, and includes a sample skills continuum chart, student self-assessment checklist, and teacher observation classroom checklist. Descriptions of strategies and sample applications are provided for the following areas: (1) study habits; (2) listening skills; (3) reading skills; (4) vocabulary skills; (5) media utilization skills; (6) note-taking/outlining skills; (6) research skills; and (7) test-taking skills. Content area, grade level, and needed materials are indicated for all sample applications. Lists of related media resources and Hawaii Department of Education publications are also provided. (MM)

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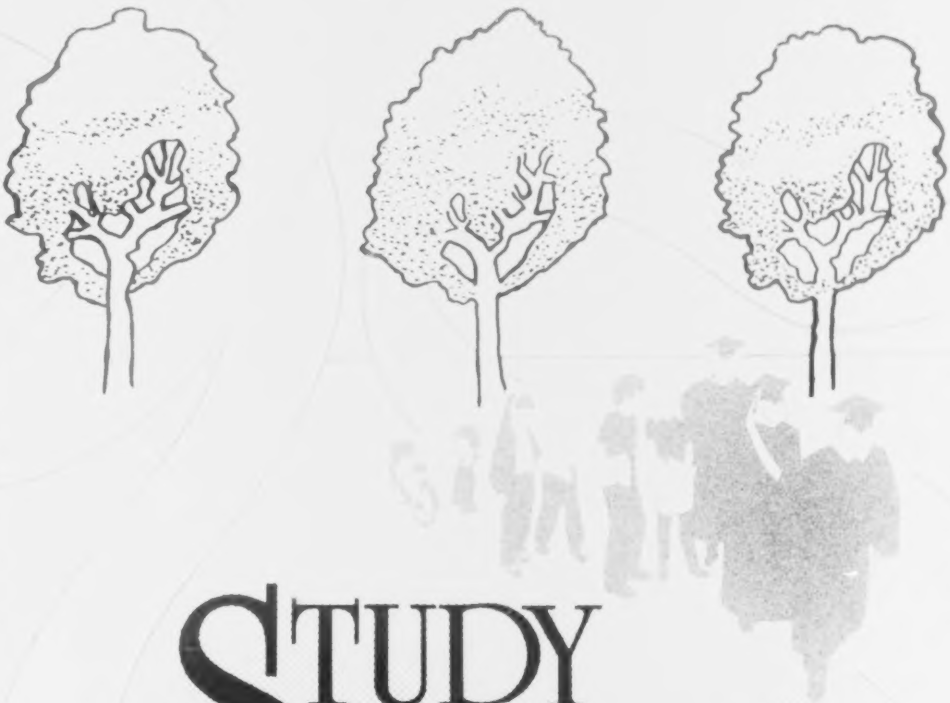

# STUDY SKILLS

## A Ready Reference for Teachers

Office of Instructional Services/Multimedia Services Branch □ Department of Education □ State of Hawaii □ RS 88-3604 □ April 1988

CS009323

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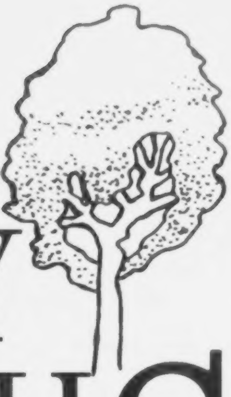

# STUDY SKILLS

## *A Ready Reference for Teachers*

# FOREWORD

Helping students to succeed and to build lifelong patterns for learning are critical goals in our schools.

While many quality programs and publications exist which address the "what of learning," there is a real need to also focus on ways to help students develop strategies to learn "how to learn."

Underlying this document are fundamental beliefs that study skills are teachable and that mastery of these skills puts students in charge of their own learning.

The contents of this publication, which are the result of collaboration among teachers, librarians, district and state office specialists, provide valuable strategies for helping educators make quality learning an exciting reality in our classrooms.

Charles T. Toguchi

CHARLES T. TOGUCHI
Superintendent

# ACKNOWLEDGMENTS

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# INTRODUCTION

Helping students to be successful learners is a vital goal in education. Teachers, administrators and students themselves agree that all learners need assistance in acquiring knowledge and in organizing, retrieving and using it.

This reference manual provides teachers with a handy tool to help students with skills that can make them more efficient and effective learners.

## WHAT ARE STUDY SKILLS?

Study skills are developed abilities that enable students to learn, to remember, to think, and to motivate themselves. These skills are an integral part of the total learning process. They are necessary for life-long learning.

Underlying study skills are the following basic assumptions:

- Study skills are teachable.
- Study skills are universal in their relevance and are basic to the learning process.
- Study skills require the use of thinking skills.
- Approaches to teaching study skills remain remarkably the same across the grade levels.
- Skills are best introduced through direct teaching and then practiced and applied in relevant teaching contexts.
- Study skills are tools most effective when matched with the learning task.
- The mastery of study skills enables students to take charge of their own learning.

## WHY TEACH STUDY SKILLS?

Students not only need to learn what to learn, or the object of learning, but they also need to identify and practice techniques on how to learn, or the processes of learning.

Mastering study skills helps students to:

- take increased responsibility for their own learning
- grow in the area of critical thinking
- internalize the steps in the learning process and become more independent in applying the steps to new situations.

The traditional emphases on teaching content mastery often presupposes that students have somewhere, somehow, acquired the skills to achieve content understanding on their own.

This assumption needs serious re-examination. Study skills need to be taught if students are to become successful lifelong learners.

## WHO SHOULD TEACH STUDY SKILLS?

Study skills are most functionally taught as an integral part of the regular curriculum. This makes every classroom teacher a teacher of study skills.

In every content area, some types of study skills are required for students to succeed in subject mastery.
Examples:

- Reading texts in social studies and English
- Following directions in shop and home economics
- Observing sports techniques in physical education
- Outlining and taking notes in science
- Taking tests in all subjects

Teaching study skills within all content areas has a synergistic effect. Students not only gain more complete knowledge of the content but they also acquire skills that will serve them in future studies.

## WHEN AND HOW SHOULD STUDY SKILLS BE TAUGHT?

There is no widely accepted research base for determining exactly when certain skills should be most effectively taught. There is general agreement, however, that the classroom teacher should determine which skills are required and the readiness of students for the development and application of these skills depending on the nature of classroom assignments required. (More detailed guidelines for doing this can be found on pp. C-2 and C-3.)

The ultimate school goal should be the development of a school-wide study skills program that meets the unique needs of its students. Such an effort would involve all grade levels and content areas in identifying and focusing on skills that match learning tasks in the classrooms. (More detailed guidelines for doing this can be found on pp. C-4 and C-5.)

## HOW ARE STUDY SKILLS RELATED TO OTHER DOE PROGRAMS, ACTIVITIES?

BASIC SKILLS PROGRAM....

Study skills fill a gap in the basic skills program. They provide practical strategies that help students to gain competence in such skills as reading, writing, listening and speaking. They do not supplant basic skills; they enhance them.

THINKING SKILLS PROGRAM....

Study skills require the use of thinking skills.

Examples:

- When students take notes from a textbook, a lecture or a television program, they are using critical skills in extracting main ideas and supporting details.
- When students answer essay exam questions, they must deal with analysis, synthesis and evaluation of information.
- When students prepare a research assignment, they are often challenged to apply information in new and creative ways.

In short, study techniques and strategies that assist students in acquiring, retrieving, integrating, organizing and using information and ideas are essentially skills in thinking as shown below.

| STUDY SKILLS | THINKING SKILLS |
|---|---|
| Retrieving ideas, info (Reading, listening, etc.) | Receptive skills (Main ideas, directions, etc.) |
| Organizing, using info, ideas (Outlining, test-taking, etc.) | Reflective skills (Inference, interpretation, etc.) |
| Integrating info, ideas (Research, etc.) | Expressive skills (Application, creation, etc.) |

AUTHORIZED COURSES AND CODE NUMBERS (ACCN) STUDY SKILLS COURSE....

The ACCN course is targeted as an elective for secondary students. This reference manual may be used as a supplemental teacher's guide for the course; however, this document has been developed for use in all classrooms at all grade levels where it is appropriate to student and content area needs.

STANDARDIZED TESTS, COLLEGE BOARD EXAMINATIONS....

Study skills help students prepare for tests. The document does not focus on skills for particular tests, but what it does teach can be applied in studying for many kinds of tests.

HOME WORK ASSIGNMENTS....

Proficiency in study skills will help students to make more efficient use of their study time and to produce more successful assignments. Teachers, in turn, must design their homework assignments to encourage reinforcement and application of these skills.

## HOW IS THIS HANDBOOK ORGANIZED?

This reference manual is organized for skimming and use by the busy elementary and secondary teacher.

It includes the following:

- Overview of study skills
- Guidelines for developing a study skills program
- Descriptions of strategies and sample applications in the following areas:
  - Study habits
  - Listening
  - Reading
  - Vocabulary
  - Media-utilization
  - Note-taking/outlining
  - Research
  - Test-taking
- Lists of related media and DOE publications

Applications in the various skills chapters are intended as examples only of how skills can be introduced. Teachers should substitute their own content area(s) and adapt these activities according to student needs and grade levels.

This reference manual does not attempt to present all possible strategies. Instead, it includes a broad sampling of strategies that have proven to be successful in classroom practice and that have been substantiated by research findings. The classroom teacher is encouraged to select from among these strategies and adapt them according to grade levels and student needs. For additional sources of information the teacher may see the list of references provided at the end of each chapter.

## HOW DO I START?

One practical approach to using this reference manual is suggested below:

- Skim the section on overview of study skills in this reference manual.
- Identify one or two specific skills you feel your students will need to succeed in class assignments.
- Match these skills with the strategies needed (already done for you in the overview).
- Adapt these strategies and teach them to your students.

Finally, for more detailed and systematic approaches to developing a total study skills curriculum, see the chapter on guidelines for developing a study skills program.

# REFERENCES

Anderson, Richard C. *Becoming a Nation of Readers: The Report of the Commission on Reading.* Chicago: University of Illinois, 1985.

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Costa, Art. *Developing Minds: A Resource Book for Teaching Thinking.* Alexandria, VA: Association for Supervision and Curriculum Development, 1985.

Jones, Beau Fly and others, eds. *Strategic Teaching and Learning: Cognitive Instruction in the Content Areas.* Alexandria, VA: North Central Regional Educational Laboratory, 1987.

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# *OVERVIEW OF STUDY SKILLS*

For handy reference, this overview is divided into two columns:

1. skills that can be applied to learning tasks in any content area and grade level

2. strategies that may be adapted and used to teach these skills; and the grade level clusters for which they are appropriate:

   - P = primary (K-3)
   - UE = upper elementary (4-6)
   - S = secondary (7-12)

This overview is not intended to be a scope and sequence chart. The selection of specific skills and possible strategies depends on the nature of the assignments and teaching-learning expectations of the classroom teacher.

The strategies included in this document are ones that have been research-based and classroom-tested. Teachers are encouraged to adapt them for any content area and grade level. They are also invited to add other strategies that have worked for them and to share these with other teachers.

## OVERVIEW OF STUDY SKILLS

P = Primary
UE = Upper Elementary
S = Secondary

| SKILL | STRATEGY | P | UE | S |
|---|---|---|---|---|
| STUDY HABITS | | | | |
| The student will be able to: | | | | |
| 1. Assess, evaluate present study habits. | Current study habits (D-4) | X | X | X |
| 2. Assess, evaluate physical study setting. | Study environment (D-8) | X | X | X |
| 3. Plan, organize, and use study time effectively. | Time analysis (D-12) | | X | X |
| | Organizing study time (D-19) | | X | X |
| | Concentration (D-21) | X | X | X |
| 4. Identify short- and long-term goals in learning. | Goal setting (D-27) | X | X | X |
| LISTENING SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Control, monitor own attention span. | Attending (E-8) | X | X | X |
| 2. Identify and develop a critical assessment of what is heard including sender's purpose, organization, main points and details, and conclusions. | Visualization/retention (E-14) | X | X | X |
| | Active listening (E-18) | X | X | X |
| | Prediction/validation (E-23) | X | X | X |
| | General listening skills (E-4) | X | X | X |
| 3. Extend thinking and increase retention of a listening experience. | Learning log (F-35) | X | X | X |
| READING SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Control, monitor own attention span. | Attention control (F-4) | X | X | X |
| 2. Identify main ideas and form an overview of an assignment. | Surveying (F-8) | X | X | X |
| | Skimming (F-12) | | X | X |
| 3. Identify and develop a critical assessment of what is read including author's purpose, organization, main points and details, and conclusions. | Questioning (F-18) | X | X | X |
| | Pattern recognition (F-22) | | X | X |
| | SQ3R (F-32) | X | X | X |
| 4. Extend thinking and increase retention of a reading assignment. | Learning log (F-35) | X | X | X |
| VOCABULARY SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Analyze the component parts of a word to get its meaning. | Structural analysis (G-4) | X | X | X |
| 2. Use known words or phrases around an unknown word to derive its meaning. | Context clues (G-12) | X | X | X |
| 3. Expand vocabulary using various comparative strategies. | Vocabulary expansion (G-15) | X | X | X |
| 4. Develop vocabulary to comprehend new concepts. | Concept attainment (G-19) | X | X | X |

## OVERVIEW OF STUDY SKILLS

P = Primary
UE = Upper Elementary
S = Secondary

| SKILL | STRATEGY | P | UE | S |
|---|---|---|---|---|
| MEDIA-UTILIZATION SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Control, monitor own attention span. | Attention control (F-4) | X | X | X |
| 2. Identify and develop a critical assessment of what is viewed including presentation's purpose, organization, main points and details, and conclusions. | Questioning (F-17) | X | X | X |
| | Macro-pattern recognition (H-7) | | X | X |
| | Pictures (H-12) | X | X | X |
| | Graphs/charts (H-15) | X | X | X |
| | Maps (H-22) | X | X | X |
| | Films/television (H-29) | | X | X |
| 3. Extend thinking and increase retention of a media-related experience. | Learning log (F-35) | X | X | X |
| NOTE-TAKING/OUTLINING SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Identify key ideas. | Determining note-worthiness (I-4) | X | X | X |
| | Key words (I-7) | X | X | X |
| 2. Analyze relationships of ideas and their details and record them in a meaningful form. | Mapping (I-14) | X | X | X |
| | Clustering (I-18) | X | X | X |
| | Formal Outlining (I-21) | | X | X |
| | Pattern recognition (I-24) | | X | X |
| 3. Take notes with greater efficiency and relevance. | Memory clue system (I-33) | | X | X |
| | Shortcuts (I-10) | X | X | X |
| RESEARCH SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Identify a topic suitable for research. | Subdividing (J-5) | X | X | X |
| | Five W's (J-8) | X | X | X |
| 2. Identify and use various search strategies to locate appropriate sources. | Surveying (F-8) | X | X | X |
| | Key word searching (J-12) | X | X | X |
| | Using library indexes (J-17) | X | X | X |
| | Using primary sources (J-21) | X | X | X |
| 3. Determine the most appropriate sources based on purpose. | Questioning grid (J-24) | X | X | X |
| | Writing a thesis statement (J-27) | | X | X |
| | Evaluating source materials (J-29) | | X | X |
| 4. Organize information for more effective presentation. | Note card sorting (J-33) | | X | X |
| | Pattern recognition (J-36) | | X | X |
| | Planning the presentation (J-44) | | X | X |
| | Writing connection (J-48) | | X | X |
| TEST-TAKING SKILLS | | | | |
| The student will be able to: | | | | |
| 1. Review information using techniques appropriate for different testing objectives. | Learning log (K-5) | X | X | X |
| | Memory techniques (K-10) | X | X | X |
| 2. Organize, manage test preparation time effectively. | Study management (K-16) | X | X | X |
| 3. Analyze testing objective and apply appropriate strategy for selecting, organizing response. | Essay test (K-21) | X | X | X |
| | Test-taking techniques (K-28) | X | X | X |

OVERVIEW OF STUDY SKILLS

P = Primary
UE = Upper Elementary
S = Secondary

| SKILL | STRATEGY | P | UE | S |
|---|---|---|---|---|
| 4. Evaluate individual performance to improve study procedures and test-taking techniques. | Learning from the test (K-36) | X | X | X |

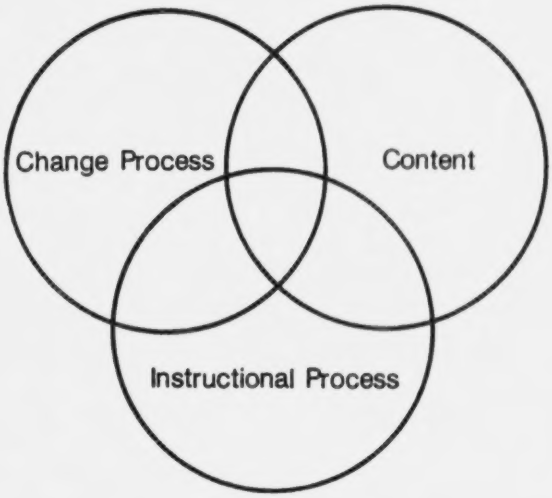
# *GUIDELINES FOR DEVELOPING A STUDY SKILLS PROGRAM*

## BACKGROUND

There are two ways to approach the design of an effective study skills program. The first, and most productive, is a school-wide effort. If the total instructional staff, with administrative support and involvement, participates in the planning and implementation of study skills instruction, there is greater potential for addressing the full spectrum of study skills, for increased motivation as students perceive the practical application of the skills in a variety of settings, and for improved retention of skills. Part I of this chapter suggests ways for a school-wide effort to be carried out.

A study skills program may also be developed by individual teachers, groups of teachers, grade levels, and departments, in the absence of a school-wide plan. While some of the advantages of a broader program may not be realized, students will benefit from study skills instruction even on a smaller scale. Part II of this chapter suggests ways for individual teachers to plan for study skills instruction.

Whether the program is developed on an individual classroom, department, grade level, or school-wide level, the process involves the following components:



INSTRUCTIONAL DEVELOPMENT MODEL

**CHANGE PROCESS** focuses on the people who will be responsible for the implementation of a study skills instructional program. It involves the need for positive, supportive leadership; for shared decision-making, group communication, and teamwork; and for establishment of a climate that allows for trial and error experiences, inservice training, and feedback. The processes described in Parts I and II on the following pages provide for each of the areas in the change process component.

**CONTENT** addresses the learning process. It relates to integrating a body of knowledge, skills and attitudes, and processes with the language/experience/thinking of the student. The success of study skills instruction is dependent on enabling the students to apply study skills learning in practical, real-life situations and to relate study skills to other content learning. Planning for instructional delivery in the following processes should take into account the content component.

**INSTRUCTIONAL PROCESS** provides a sound, step-by-step means to plan, deliver, and evaluate study skills instruction. Parts I and II on the following pages illustrate the steps involved in the instructional process.

### Part I - Developing a school implementation plan

The process described in this section reflects successful program-planning carried out by schools in other cross-curriculum efforts. Individual schools will need to adapt the process to meet the specific needs and resources of their own situations.

**Preliminary planning**

1. Establish a steering committee to assist the administrator in program development.
2. Examine the process to make necessary adjustments.
3. Draft an action plan with identified tasks, the person(s) responsible, and a time-line.
4. Introduce this action plan for program development to the staff.

**Instructional goals**

In small groups, e.g., departments, grade levels:

5. Use the "overview of study skills" (pp. B-1 to B-4) as an assessment tool to determine what study skills instruction is already being provided.
6. Identify what study skills need to be taught.
7. Determine which skills in step 6 are high priority.

Before total staff review:

8. Compile the small group data into a single large chart. (Sample form provided on p. C-6.)

With total staff:

9. Review and compile data on the chart.
10. Identify gap areas.
11. Reach consensus on high priority study skills.

In small groups:

12. Decide which instructor(s) will address the high priority study skills.

Prior to final review:

13. Add the new data to the chart and identify on the chart the high priority study skills that have not been assigned to instructors.

In total staff meeting:

14. Resolve the problem of high priority study skills included on the chart but not assigned to instructors.

15. Reach final consensus on the continuum chart.

**Assessment**

16. Use the "overview of study skills" (pp. B-1 to B-4) as tools for student self-assessment or teacher observation of student mastery. (Sample forms provided on pp. C-8, C-9.)

**Analysis**

17. Review continuum chart individually and in small groups to validate it with assessment data. Make necessary adjustments.

18. Review continuum chart in relation to the adjustments made by small groups. Revise in total staff review if needed. Questions that need to be asked are, "What are the areas of greatest need?" and "Do we need to shift our priorities in light of the assessment data?"

**Planning**

19. Individually or in small groups, plan for instruction based on:

    a. student needs
    b. content objectives
    c. student learning styles
    d. instructor teaching styles.

**Implementation**

20. Conduct instruction.

21. Assess effectiveness of instruction for mid-course correction.

**Evaluation**

22. Evaluate student progress, using previous tools as a post-test, or selecting formal assessment tools.

23. Share findings with small groups, making recommendations for adjustments.

24. Share findings with total staff, making recommendations for adjustments.

**Process continuation**

25. Begin with step 19 if further instruction is indicated.

## Part II - Developing an individual/small-group implementation plan

The process described in this section is an adaptation of a school implementation plan. It can be used by an individual teacher or a small group of teachers, e.g., departments, grade levels. Asterisks note the steps in the process that are necessary only for small group, not individual, implementation.

**Preliminary planning**

*1. Establish a meeting of interested teachers.

2. Draft an action plan with identified tasks, the person(s) responsible, and a time-line.

**Instructional goals**

3. Use the "overview of study skills" (pp. B-1 to B-4) as an assessment tool to determine what study skills instruction is already being provided.

4. Identify what study skills need to be taught.

5. Determine which skills in step 4 are high priority.

*6. Compile the small group data into a single large chart. (Sample form provided on p. C-6.)

7. Review the compiled data.

8. Identify gap areas.

*9. Reach consensus on high priority study skills.

*10. Decide which instructor(s) will address the high priority study skills.

*11. Add the new data to the chart and identify the high priority study skills on the chart that have not been assigned to instructors.

*12. Resolve the problem of high priority study skills on the chart not assigned to instructors.

*13. Reach consensus on the continuum chart.

**Assessment**

14. Use the "overview of study skills" (pp. B-1 to B-4) as tools for student assessment or teacher observation of student mastery. (Sample forms provided on pp. C-8, C-9.)

**Analysis**

15. Review continuum chart individually and/or in small groups to validate the draft with assessment data. Make necessary adjustments.

16. Review continuum chart in relation to adjustments made. Questions that need to be asked are, "What are the areas of greatest need?" and "Do we need to shift our priorities in light of the assessment data?"

**Planning** 17. Individually or in small groups, plan for instruction based on:

   a. student needs
   b. content objectives
   c. student learning styles
   d. instructor teaching styles.

**Implementation** 18. Conduct instruction.

**Evaluation** 19. Assess effectiveness of instruction for mid-course correction.

20. Evaluate student progress, using previous tools as a post-test, or selecting for formal assessment needs.

*21. Share findings with small groups, making recommendations for adjustments.

**Process continuation** 22. Begin with step 17 if further instruction is indicated.

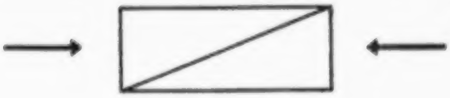
## Summary

Study skills instruction, like instruction in other areas, is an on-going process, with initial and mid-course adjustments necessary to meet the needs of new students, and of students who demonstrate varying degrees of mastery. Whether an entire school staff, smaller clusters, of teachers, or individual teachers are involved, the benefits to students in all content areas should be evident as students learn how to learn, and approach new content learning with increased confidence.

## CONTINUUM CHART

Instructions: Fill in the chart indicating the type of instruction provided at each grade level and in which content area(s) according to the example.

Type of instruction
I=introduction
R=reinforcement



Content area(s)
L=language arts
M=mathematics
SS=social studies
SC=science
H=health
P=P.E.
A=art
M=music
(Add others as needed)

EXAMPLE

| Study skills | Grade levels | | | | | | |
|---|---|---|---|---|---|---|---|
| | K | 1 | 2 | 3 | 4 | 5 | 6 |
| **Study habits** | | | | | | | |
| 1. Assess, evaluate present study habits | | | | | | | |
| 2. Assess, evaluate physical study setting | | | | | | | |
| 3. Plan, organize, and use study time effectively | | | | | | | |
| 4. Identify short- and long-term goals in learning | | | | | | | |
| **Listening skills** | | | | | | | |
| 1. Control, monitor own attention span | | | | | | | |
| 2. Identify and develop a critical assessment of what is heard including sender's purpose, organization, main points and details, and conclusions | | | | | | | |
| 3. Extend thinking and increase retention of a listening experience | | | | | | | |
| **Reading skills** | | | | | | | |
| 1. Control, monitor own attention span | | | | | | | |
| 2. Identify main ideas and form an overview of an assignment | | | | | | | |

**Suggestions for use of the Student Self-Assessment Checklist**

Students often are candid at assessing their own strengths and weaknesses. The checklist can be used to determine their self-perception of mastery and application of study skills (see next page).

The checklist form can be used by the individual teacher to prepare a classroom profile. Tally student responses by putting hash marks in the appropriate column. The total can then be recorded on another blank form. Higher numbers in the seldom column indicate the need for instruction or directed practice. Higher numbers in the sometimes column indicate the need for review or reinforcement. Higher numbers in the usually column indicate that most of the students are confident in this area, but that some students may need individual assistance in order not to be at a disadvantage because of weakness in a particular study skill.

Name ______________________
Period ______________________

## STUDENT SELF-ASSESSMENT CHECKLIST

I do well in the following study skills: (Check the correct column.)

| Study skills | Seldom | Sometimes | Usually |
|---|---|---|---|
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## TEACHER OBSERVATION CLASSROOM CHECKLIST

Period__________

Most of the students in the class seem to fall into the following levels of competence:

| Study skills | Below average | Average | Above average |
|---|---|---|---|
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## BIBLIOGRAPHY OF ASSESSMENT INSTRUMENTS

*Brown-Holtzman Survey of Study Habits and Attitudes* (SSHA). The Psychological Corporation, 1956.

*Cornell Learning and Study Skills Inventory* (CLASSIC). Cassel, 1971.

*Effective Study Test.* Effective Study Materials, 1972.

*How Good a Student Are You?* (Excerpt from *How to Study*, by James and Ellin Deese). McGraw-Hill, n.d.

*Picture Story Language Test* (PSLT). Myklebust, 1965.

*Piers-Harris Children's Self-Concept Scale* (PHCSC). Piers-Harris, 1969.

*Study Habits Checklist.* Science Research Associates, Inc., n.d.

*Study Skills Survey.* Effective Study Materials, 1965.

*Survey of Reading/Study Efficiency* (SR/SE). Science Research Associates, 1968.

# ***STUDY HABITS***

## Assessment

- Current study habits D-4
- Study environment D-8

## Study time

- Time analysis D-12
- Organizing study time D-19
- Concentration D-21

## Planning

- Goal setting D-27

# BACKGROUND

Before students can successfully apply specific study skills and strategies, they must develop positive study habits and be able to find a study environment conducive for them.

This chapter focuses on the critical need to set the stage for the application of specific study skills.

Students with effective study habits will be better able to:

- understand effective study habits as basic tools for lifelong learning
- know how to study for effective learning
- set up a good study environment
- organize time efficiently
- prioritize tasks and plan accordingly.

# ASSESSMENT: CURRENT STUDY HABITS

**WHAT** Assessing current study habits is a skill that requires that students evaluate their present study methods. It allows them to identify techniques that might be hindering progress and those which most appropriately meet their needs.

**WHY** It encourages students to take control of their study habits, improve upon them, and, in so doing, become more responsible for their own learning.

**WHEN** This skill should be presented or reinforced early in the school year, as the first assignments are given. It can be introduced as early as the primary grades.

**HOW** Steps for students:

1. Identify positive and negative study behaviors.
2. Assess current study behaviors.
3. Identify areas for improvement in study habits.

## CONTENT:

All content areas

## GRADES:

Upper elementary - junior high

## MATERIALS:

Study habit questonnaire

## CURRENT STUDY HABITS

1. Introduce the strategy by doing one of the following:

   - Ask students to identify their good study habits and their poor study habits. Ask why they think these did or did not work.

   OR

   - Read the following paragraph. Ask students to list all the things that may be causing Eric's study problems. Ask what they would suggest to help Eric improve. List on blackboard. Discuss.

   > *No matter how hard he tries, Eric is always behind in his school work. Every night, after dinner, he goes to his room to study; however, something always seems to happen. The telephone may ring, and he ends up talking to a friend for an hour; or he starts to watch a great program on the portable TV in his room; or he discovers that he forgot to bring home the right book. Before he realizes, it is 11:30 p.m. and time to go to sleep. He knows he should go to sleep earlier because he is always tired; but he just never seems to be able to get enough rest.*

2. Review sound study habits:

   - Study in a regular place.
   - Keep the necessary study materials in your study area.
   - Eliminate as many distractions as possible.
   - Keep study area neatly organized.
   - Organize and use study time wisely.
   - Get enough sleep so that you are not too tired to study.

3. Have the students complete a study habit questionnaire on p. D-7, stressing that this is a tool to help them, not a worksheet with right or wrong answers.

4. Talk to students about trying to improve only one or two areas at a time. Tell students they will be given the opportunity to review this questionnaire and their progress once each quarter. Offer assistance to those who need extra help and/or encouragement.

ADDITIONAL IDEAS

1. Apply the same techniques to have students analyze:
    - the pros and cons of studying with friends
    - health habits that affect studying.
2. Students in the elementary grades can develop a class chart or bulletin board identifying good study habits.

## HOW DO YOU STUDY?

Answer the following questions about your study habits.

1. Where do you usually study? ____________________

2. Do you usually study alone? ____________________

3. Do you study while

   watching TV? ____________________

   listening to the radio? ____________________

4. Do you study at the same time each day? ____________________

5. Do you interrupt your studying

   to talk on the telephone with friends? ____________________

   for other reasons? ____________________

6. Do you keep all the materials you will need for studying (paper, pencil, dictionary, etc.) close by? ____________________

7. Do you plan and organize what and how you will study before you begin? __________

8. Do you think about and review an assignment you have just completed? __________

9. What are your good study habits?

   What habits need to be improved?

10. How would you rate your study habits?

    Good____ Fair____ Poor____

# ASSESSMENT: STUDY ENVIRONMENT

**WHAT** The students' study environment may affect how well they learn. Students, therefore, need to become aware of the physical setting which is most conducive to a sound environment.

**WHY** Once students have been able to discover the variables in the environment that affect learning, they will be better able to establish the proper study environment.

**WHEN** Introduce this at the outset of the school year, preferably following the discussion of study habits. Creating a suitable study environment is a concept that can be introduced as early as the primary grades.

**HOW** Steps for students:

1. Identify the characteristics of a good study environment in terms of the physical setting.

2. Create a study environment that best meets your needs.

# SAMPLE APPLICATION

## CONTENT:

All content areas

## GRADES:

Junior high

## MATERIALS:

Handouts on "Study Environment," "My Study Place"

## STUDY ENVIRONMENT

1. Introduce the idea of physical environment by asking the students to role play their idea of a Frank DeLima-type character trying to study under very noisy, crowded conditions. Discuss the "negatives" in the physical environment. Ask how they would make the environment more conducive to studying. Point out that going to the library is an alternative if there is no quiet space at home.

2. List their suggestions.

3. Distribute and discuss the handout on study environment (on p. D-11). This may be modified for varying grade levels, reading abilities.

4. Ask students to plan their own study environment using a form like the one below:

MY STUDY PLACE

Where will I study? ____________________________

bedroom, kitchen, etc.

What furniture do I need? ____________________________

desk; table/chair; etc.

What type of lighting will I have? ____________________

____________________________________________

desk lamp, lamp, ceiling lamp

What study materials and supplies do I need? __________

____________________________________________

paper, pencil, pens, etc.

ADDITIONAL IDEAS

Teachers in the elementary grades can focus on one or two factors (e.g., corrent sitting posture, necessary study tools) and have students practice these in class on a regular basis. This will ensure readier transfer to home study situations.

## STUDY ENVIRONMENT

Your study environment is an important factor in determining how well you will learn; it includes not only where to study but also the physical environmental conditions under which you study. Since every individual has different habits and preferences and is productive under different circumstances and conditions, what is the best study environment may vary from one person to another.

The following are suggestions for an effective study environment:

1. Have the tools you need to study at your desk or study place.

2. Determine where to study. Know where you study most effectively.

    a. It is believed that an area quiet and free from distractions is essential. However, some students can study well with unobtrusive background music. One thing is certain--loud, extreme music will distract anyone.

    b. Always studying in the same place is most effective since books and necessary materials are readily available and don't have to be transported. The familiar room provides the right atmosphere and stimulus for work.

    c. If you are a member of a large family and find home to be noisy and full of distractions, it may be necessary for you to go to a quieter place such as a library or a study hall.

3. Study furniture

    a. Avoid becoming too relaxed. Lying on a bed or slumped on a sofa may cause you to become too relaxed and may result in sleep. You can work better sitting upright in a chair since it is conducive to the concentration and mental activity that you need.

    b. Sitting at a desk or table with an erect posture facilitates studying. The desk or table space should be large enough to hold your books and papers. The chair should be of such height that your feet can be placed flat on the floor when your knees are at right angles. The relation of the chair height to the height of your desk top is important--the top of the desk should be level with your elbow joint.

    c. Keep your desk free from distracting articles such as photos and other personal items.

4. Lighting--there should be no glare or sharp contrasts of light and shade. Some form of indirect lighting is best for general illumination with a desk lamp over your work.

5. Ventilation and heat--avoid extreme heat or cold and stale and stuffy atmospheres. Your room should have good ventilation and comfortable air temperature.

(Adapted from *An Overview of Study Skills* [Draft]. Honolulu: Department of Education, Office of Instructional Services/General Education Branch, May 1984.)

# STUDY TIME: TIME ANALYSIS

**WHAT** Time analysis is a strategy that allows students to efficiently plan and organize their time.

**WHY** Time analysis skills allow students to be in better control of time needed for their instructional, recreational and family needs. These skills help students to make decisions and set priorities.

**WHEN** This skill should be introduced in the upper elementary grades and reinforced as needed.

**HOW** Steps for students:

1. Keep a time log to become more aware of how you spend your time.
2. Identify time-wasters and areas in which you need to devote more time.
3. Make out a time plan schedule; revise as needed.

## CONTENT:

All content areas

## GRADES:

Junior high

## MATERIALS:

Time log form

## TIME ANALYSIS/TIME LOG

1. Ask students if their parents ever get annoyed at them when they haven't completed their homework or cleaned their room on time. Ask if parents ever say, "What do you do with all your time?" or "What did you do all day?" Discuss.

2. Have students keep a time log of everything they do for the next three school days. Carefully review and discuss the time log form (on following page). Younger students could keep a time log for one day.

3. On the fourth day discuss what they discovered by keeping their time log:

   - Were they wasting time? How?
   - What would they keep the same?
   - What would they change?
   - Where should they spend more time?
   - Was there "balance" (e.g., time for play, time for study, time for family)?

## TIME LOG

For the next three days write down everything you do during the day from the time you get up to the time you go to sleep. Be sure to list time of day, type of activity, amount of time spent on each activity.

Date ______________________ Day of Week ______________________

| Time Begun | Time Completed | Amount of Time Spent on Activity | Name of Activity |
|---|---|---|---|
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## TIME LOG
(continued)

Reverse Side

How much time was given to:

School ____________________

Chores____________________

Homework____________________

Sports ____________________

TV ____________________

Playing with friends ____________________

Meals ____________________

Free Time ____________________

Other (list) ____________________

____________________________

## CONTENT:

All control areas

## GRADES:

Upper elementary - junior high

## MATERIALS

Schedule planning form

## TIME MANAGEMENT/PLANNING A SCHEDULE

1. Review the class discussion and findings related to the time log activity.

2. Write the word schedule on the blackboard. Ask students to define it.

3. Discuss the importance of planning a schedule in relation to time management. (What do you need to do vs. what you want to do.)

   - Be certain you make time for both work and play.
   - Try to schedule your study time when you are not tired.
   - Plan for both exercise and free time.
   - Keep the schedule flexible enough to allow for emergencies.

4. Practice planning a schedule for the next school day using the form provided on p. D-18.

   Assignment: Plan a schedule for the next school day using the same form or another standard form. Follow the schedule as closely as possible.

5. Follow-up: Discuss the success students had in following their practice schedule and the need to revise the schedule if necessary.

   Guide questions:

   - How did you feel about following a schedule?
   - Were you able to follow most of the time? Why?
   - Do you need to revise it? Why? How?

ADDITIONAL IDEAS

1. Older students could apply planning a schedule to the following:

    - weekly schedule
    - major quarter or semester assignments
    - study time for the month/quarter/semester.

    Continue to emphasize the interrelationship between goal setting and time management.

2. Students should also be encouraged to keep calendars (as compared with schedules). This is a practical life skill that will help them organize events, meetings, deadlines both in and out of school.

## SCHEDULE PLAN

Day ______________________________

| | |
|---|---|
| 6:00 AM | |
| 7:00 AM | |
| 8:00 AM | |
| 9:00 AM | |
| 10:00 AM | |
| 11:00 AM | |
| 12:00 | |
| 1:00 PM | |
| 2:00 PM | |
| 3:00 PM | |
| 4:00 PM | |
| 5:00 PM | |
| 6:00 PM | |
| 7:00 PM | |
| 8:00 PM | |
| 9:00 PM | |

# STUDY TIME:
# ORGANIZING STUDY TIME

**WHAT** Students need to not only set aside study time but to plan how to use that time effectively.

**WHY** Organizing and thinking about what they need to accomplish will enable students to make more effective use of time designated to a particular task.

**WHEN** Introduce this after students have discussed time management at the upper elementary levels. Reinforce as assignments and course expectations increase.

**HOW** Steps for students:

1. Think about what you need to do before beginning assignments.
2. Plan how to proceed with each assignment.
3. Plan study strategy accordingly.

# SAMPLE APPLICATION

**CONTENT:**

All content areas

**GRADES:**

Upper elementary

## ORGANIZING STUDY TIME

1. Ask students to read about Janice's study methods. Ask them to answer the following questions:

   Were they good or poor? Why?

   Janice's study methods:

   *Janice sat down at the desk in her room to study. She looked over the assignments she had to do: read chapter 5 in science, complete 10 math problems, and study for a spelling test. Her goal was to complete her homework in time to watch her favorite TV show and to phone her friend, Jean. Janice thought to herself, "I'd better plan how to do this. Math is my hardest subject, so I should do that before I get tired; it should take about 20 minutes. Then I'll read the science chapter; that should take a half hour; and then I'll study my spelling words. Since I've been studying a little each night, this will be mostly review and will take only ten minutes. Boy! That won't be bad at all. I'll still have time to phone Jean and watch TV before it's time to go to sleep."*

2. Ask students if this is how they begin to study.

3. Point out that Janice set a goal and made a plan to reach that goal.

4. Discuss making realistic plans:

   - Do the assignment for the hardest subject when you are most alert.
   - Carefully review the assignment so you know what you need to do before you begin.
   - Estimate how long you think it will take to do each assignment.
   - When you finish an assignment, briefly review what you just learned. This should help you to remember it better.
   - Be certain to build short break periods into your study periods. Take a 5 - 10 minute break after each 25 to 30 minute study period.

# STUDY TIME: CONCENTRATION*

**WHAT** Concentration is thinking, centering one's attention over a period of time. It is necessary for understanding and retaining information. The three major interferences to concentration are 1) external/physical or internal/psychological distractions; 2) mental or physical fatigue; and 3) lack of interest (*An Overview of Study Skills* 1984). Being able to concentrate is critical to all content areas and is a necessary lifelong skill.

**WHY** By recognizing what interferes with their concentration, students will be better able to understand and control these distracting elements.

**WHEN** Because of the complexity of concepts involved, concentration strategies need to be introduced and expanded at varying grade levels, from primary through secondary grades.

**HOW** Steps for students:

1. Identify specific factors that interfere with concentration.
2. Problem solve solutions to help overcome these distractions.
3. Recognize the relationship between studying and concentration.

---

* Related strategies appear in the following chapters: "attention control" in reading (p. F-4) and in media-utilization skills (p. H-5), and "attending" in listening skills (p. E-8).

# SAMPLE APPLICATION

## CONTENT:

Guidance

## GRADES:

Junior high

## MATERIALS:

Variety of AV equipment/ AV software, radio; Handouts: "Interferences to Concentration/Sources of Distraction," "Suggestions to Help Improve Concentration," "What Distracts You?"

## CONCENTRATION

1. Introduce this lesson at the beginning of class. Arrange to have the radio playing, the video/TV on, and other appropriate distractions. As the noise continues, begin to very quietly discuss a serious project assignment (note student responses). Stop after several minutes (if a student does not interrupt first).

   Ask for reactions: List them.

2. Divide class into small groups. Ask students to discuss what distracts them when they are trying to study and to think of possible solutions.

   Have groups report back to total class. Discuss.

3. Review/discuss handouts "Interferences to Concentration/Sources of Distraction" and "Suggestions to Help Improve Concentration" (on following pages). These may be adapted.

4. Follow-up: Administer "What Distracts You?" (on p. D-26). Discuss results trying to determine if there are points of commonality with certain distractions. Discuss possible solutions.

ADDITIONAL IDEAS

Teachers in elementary grades can focus on one or more skills (e.g., having necessary study tools, avoiding talking with seatmates while studying) and have students practice these skills on a regular basis in the classroom.

In addition, teachers can build health lessons around good eating and sleeping habits as well as proper exercise.

## INTERFERENCES TO CONCENTRATION/SOURCES OF DISTRACTION

1. External distractions in the study environment

    a. Noise
    b. Poor lighting
    c. Lack of necessary study tools.

2. Internal distractions

    a. Personal problems
        Example: worrying about getting a date for the prom
    b. Inability to make a study plan
    c. Day dreaming
    d. Academic problems
        Example: worrying about poor grades
    e. Hunger and thirst
    f. Pain or discomfort

3. Physical fatigue

    Physical fatigue is affected by diet, sleep and exercise.

    a. Diet
    Poor eating habits may contribute to physical fatigue, tension, confusion, irritability, slow down in thinking, depressions, etc.

    b. Sleep
    Sleep is important to concentration, memory and general overall effective studying and performance. It should be sufficient to meet your body needs. It is also important to maintain regular sleeping habits. You should try to study when you are most alert.

    c. Exercise
    Physical activity is extremely important in keeping your brain and body in shape to deal with the demands of studying.

    Remember that all exercise is not equally effective; the more enjoyable it is, the more good it does you. Exertion is not necessarily exercise. Proper exercise should make you breathe hard, perspire gently and leave you with a glow.

4. Mental Fatigue

    Mental fatigue may not only be a result of the lack of recreation or not feeling fit but may also be due to boredom and lack of interest in the subject.

To combat mental fatigue

a. Maintain a proper diet, get adequate sleep and exercise.
b. Alternate subjects you are studying to avoid boredom.
c. Make studying more enjoyable by meeting with classmates to study as a group, seek out individual tutoring, etc.

(Adapted from *An Overview of Study Skills* [Draft]. Honolulu: Department of Education Office of Instructional Services/General Education Branch, May 1984.)

## SUGGESTIONS TO HELP IMPROVE CONCENTRATION

1. Have a positive attitude towards learning.
2. Make sure you have all the materials you need for studying.
3. Set reasonable goals. Organize your assignments.
4. Plan by the amount of material to be covered, not by the clock.
5. Build sufficient rest breaks (10-15 minutes) into your study schedule.
6. Vary activities to avoid boredom. Arrange each study period so that different types of activities or different types of subjects follow one another.
7. Try the "check mark technique." Keep a sheet of paper by you and put a check mark on it whenever you catch yourself not concentrating. This will help remind you to get back to work.
8. Absolute quiet is not necessary for concentration. You can learn not to be distracted. Practice easy but interesting tasks under potentially distracting circumstances, then when you are able to ignore these distractions, shift to more difficult tasks.
9. Realize that you won't lose friends, respect or miss out on good times because of your studying.

(Adapted from *An Overview of Study Skills* [Draft]. Honolulu: Department of Education Office of Instructional Services/General Education Branch, May 1984.)

## WHAT DISTRACTS YOU?

Concentration is the number one problem for many students. Frequently, the problem is one of finding a place to study where there are no external distractions. External distractions are those that originate outside the body. Telephone calls, visitors, and noises are examples. Concentration may be difficult when there are too many such distractions present. This checklist will help you analyze distractions in the places you study.

List the two places where you usually study in the order you use them most:

A__________________________ B__________________________

Now check the column that applies to each of these places.
T=true F=false

| | | Place A | Place B |
|---|---|---|---|
| 1. | People often interrupt me when I study here. | T F | T F |
| 2. | I can often hear radio or TV when I study here. | T F | T F |
| 3. | I can often hear the phone ringing when I study here. | T F | T F |
| 4. | I think I take too many breaks when I study here. | T F | T F |
| 5. | My breaks tend to be too long when I study here. | T F | T F |
| 6. | I tend to start talking to people when I study here. | T F | T F |
| 7. | Instead of studying, I spend time on the phone. | T F | T F |
| 8. | Temperature conditions are not very good for studying here. | T F | T F |
| 9. | Chair, table, and lighting arrangements here are not very helpful for studying. | T F | T F |
| 10. | I don't enjoy studying here. | T F | T F |

Now total the checks in each column. The column which has the most "false" checks may be the least distracting place to study. Try to plan your day so that you do as much of your work as you can there.

(Adapted from *An Overview of Study Skills* [Draft]. Honolulu: Department of Education Office of Instructional Services/General Education Branch, May 1984.)

# GOAL SETTING

**WHAT** Goal setting is a tactic that students may use in specifying the direction they wish to set for themselves and monitoring progress in that direction (Marzano and Arredondo 1986).

**WHY** Research has shown that there is a positive relationship between setting goals and task performance (Marzano and Arredondo 1986).

**WHEN** Goal setting can be introduced as early as the primary grades and reinforced in the upper grades.

**HOW** Steps for students:

1. Learn the characteristics of effective goals.
2. Set short-term and long-term goals.
3. Evaluate and redefine goals.

## CONTENT:

Guidance

## GRADES:

Junior high

## GOAL SETTING

1. Ask students to discuss what they plan to do when they graduate from high school. List.
2. Have students discuss their plans in terms of specific goals.

   Example of short-term goal: pass a quiz this week.
   Example of long-term goal: graduate from high school.
3. Discuss goal setting in terms of a time frame.
4. Discuss students' list of goals in terms of concrete goals (e.g., getting an "A" on an upcoming term paper) and abstract goals (e.g., doing better in class).
5. Follow up: Have students list their own goals for this school year. Encourage social/personal as well as academic goals.

ADDITIONAL IDEAS

1. Have students participate in setting short- and long-term class goals.
2. Have students set short- and long-term goals to help improve study skills.
3. Discuss the importance of being able to redefine goals should unforeseen circumstances require that this be done (i.e., contingency planning).
4. Teachers in elementary grades can introduce goal setting by setting goals for class activities with students. After these activities have been completed, teachers can review and evaluate the success of the activities with the class.

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# LISTENING SKILLS

## Pre-listening

- General listening skills E-4
- Attending E-8

## Listening

- Visualization/retention E-14
- Active listening E-18
- Prediction/validation E-23

## Post-listening

- Learning log E-27

# BACKGROUND

Listening is an important part of our everyday communication. In the classroom, students spend a large amount of time listening to lectures and other forms of oral presentations.

Listening is an acquired skill. It means attending to what is being said and thinking about what the speaker means. Good listening demands understanding and practice.

Good listeners demonstrate skills which help them to do the following:

- focus attention
- use clues that organize and relate information
- make connections between prior knowledge and what the speaker is saying.

Listening is the basis of being a successful student. Students who have mastered listening strategies will be more successful at learning and at retaining what has been learned.

Listening is also at the heart of being a successful person. Good listeners are appreciated by others; they not only gain respect, but insights into others. The insights are critical in developing and maintaining effective interpersonal relationships.

Although this chapter does not fully address the broader spectrum of effective communication, the introductory section on general listening skills provides students with some listening concepts and strategies that are critical to good communication.

# PRE-LISTENING: GENERAL LISTENING SKILLS

**WHAT** Good listeners are appreciated by others. By being a good listener, one not only gains respect, but insights into other people. These insights are critical to becoming an effective listener.

There are two kinds of listening--verbal and nonverbal. Verbal listening refers to giving feedback, asking questions to clarify meaning and paraphrasing. Nonverbal listening refers to silence, attentive body posture, good eye contact, smiles, and other body language that are indicators of listening.

**WHY** To be a good listener, one must decide to listen, be clear about it and demonstrate both verbal and nonverbal behaviors of listening. Listening is an integral part of the communication process. It cannot be isolated from it.

**WHEN** These skills should be reinforced in all listening situations from primary through secondary grades.

**HOW** Steps for students:

(Nonverbal listening)

1. Be silent while speaker is making presentation.
2. Maintain eye contact.
3. Demonstrate attentive body language.

(Verbal listening)

1. Provide appropriate feedback to speaker.
2. Ask questions to clarify a point or get more information.

## CONTENT:

All content areas

**GRADES:**

Secondary

## GENERAL LISTENING SKILLS

1. Present the following points in a mini-lecture and have students take notes.

Nonverbal listening

- Be silent. Silence may mean remaining quiet while the speakers talk and not interrupting until they have finished presenting their ideas. Don't interrupt with suggestions, opinions. Keep your comments appropriate and make them at an appropriate time. It also means providing some wait time before reacting in order to let speakers gather their thoughts. Silence can provide good think time. The wait time will also help listeners formulate their own thoughts.

- Maintain eye contact. Looking at the speaker demonstrates attention and genuine interest. It also helps the listener focus better.

- Demonstrate attentive body language. You can communicate openness by your posture, body position, and facial expression. You can display acceptance behavior that says, "I'm not faking attention and am genuinely interested in what you have to say." Attentive body language might include nodding of the head, smiling, sitting on the edge of the seat, or sitting straight.

Verbal listening

- Give feedback. At the appropriate time, respond to what the speaker has said. Feedback may come in the form of an acknowledgment, question or paraphrase.

    - Acknowledgment. Showing that you understand someone doesn't require that you agree with them. It is a courteous and effective way of helping other people say exactly what they mean.

Question. Questions help to clarify an idea or get more information. When you do not understand what has just been said or when you need more information, you will probably ask questions. Asked improperly, a question may arouse defensiveness on the part of the listener. To be supportive questions might be those that encourage a person to give more details, that seek to clarify the meaning or use of a particular word, and that encourage the speaker and listener to share thoughts and feelings.

Paraphrase. Paraphrasing is not parroting. To paraphrase is to restate or summarize in your own words what you think the other person has said, emphasizing the intended meaning. Paraphrase when you think you know what a person means or feels but you are not absolutely sure. You should also paraphrase when better understanding of a message is necessary before you can continue the communication. Finally, paraphrase when you are inclined to have some strong reaction to what the person has said and your reaction might cause you to misinterpret the message.

2. Have students provide feedback on the main points.
3. Provide opportunities for actual practice with these strategies.

ADDITIONAL IDEAS

1. Some worthwhile activities for the elementary grades include the following:
    - Occasionally put messages to be taken by the pupil on an oral basis.
    - Ask students to list all of the sounds they hear in a given period of time inside and outside of the classroom.
    - Read the description of a place or situation to the class and then encourage them to draw pictures of what they heard.
    - Read a poem, a story, or an essay which is likely to stimulate strong emotions, and then ask the pupils to discuss their feelings.

- Whisper a short message to a child at one side of the class and then ask the student to relay the message to the child nearest him/her. Continue this procedure until the message has been passed to every child around the room. Ask the last child to repeat aloud what he/she heard, and then compare this with the original message.

- Play the game "Twenty Questions." Build the game around people and places being studied in the classroom.

- Read description of famous people in history and have pupils try to guess who the people are.

- Describe a problem situation and have the children discuss possible solutions.

- Listen to a story or a poem and have the children suggest appropriate titles for each.

2. Teachers also need to take an inventory of their own listening and speaking habits. If they find that they talk a great deal more than they listen to pupils, they might well think about bringing this situation into closer balance. Students learn their first lesson concerning listening from the example their teachers set.

# PRE-LISTENING: ATTENDING*

**WHAT** Proficient listeners are able to focus their attention and concentrate on what is being said.

Students can be helped to monitor and control their attention by being aware of some of the following distractions that might occur:

- daydreaming, tuning out
- noise, environment
- inner conflicts
- bias or negative attitude/emotions
- lack of purpose, motivation
- concentration on facts and details and on the main idea
- insufficient vocabulary.

**WHY** By being mentally alert, the student becomes more efficient, using less time to learn more.

**WHEN** Students must be reminded to focus the brain on the listening task and to filter out distractions in all critical listening situations from primary through secondary grades.

**HOW** Steps for students:

1. Become aware of how well you are paying attention to tasks in general.
2. Identify the amount of attention required for the task at hand.

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* Similar strategies appear in the following chapters: "attention control" in reading (p. F-4) and in media utilization skills (p. H-5) and "concentration" in study habits (p. D-21).

3. If necessary, raise your attention level by raising your energy, and bracketing and looking for meaning. (For a description of bracketing, see "attention control" in the chapter on reading skills (p. F-4).

# SAMPLE APPLICATION

**CONTENT:**

Language arts

**GRADES:**

Upper elementary

## ATTENDING

1. Introduce the skill by asking students to do the following:

   - Take the following quiz to test for alertness. (As students respond to the statements, ask them to concentrate on making sense of what they hear and to respond appropriately.)

---

*Instructions*

1. *Write "yes" no matter with what letter your name begins.*
2. *Of the words "music" and "toy," write the shorter.*
3. *Write "no" even if you think elephants are larger than ants.*
4. *Write the numbers 2, 7, 4, 5 and 8. Circle the largest number.*
5. *If you circled 7, draw a square; if not, draw a circle.*
6. *If hens lay eggs, complete this sentence correctly: "Birds can ____."*
7. *If 5 x 2 is equal to 10, draw a triangle; if not, write your age.*
8. *Give the wrong answer to this question: "Is Hawaii the 50th state?"*
9. *If Washington was not the first President of the United States, write the shorter of the words "red" and "black;" if he was, sign your name.*

---

- Discuss correct responses.
- Have students make a list of distractions or roadblocks to good listening. Categorize the list. To further understand the list, dramatize some of the

distractions on the list. Following the dramatization, discuss possible ways that can be used to overcome the distractions.

OR

- Draw a diagram illustrating "the road to good listening." Have students on the road draw in road blocks and aids to listening. Ask students to visualize themselves on this road. During the following weeks, have them mark through a section in the road for every success. Label and date the successes.

2. Provide practice in attending through the following activities as needed.

   - Prior to a listening task, have students set goals, identifying road blocks to overcome and deciding how best to overcome them. They can personalize this activity by creating a diagram of possible roadblocks and charting their progress over the weeks.

   - Have students focus on the listening task by asking themselves the following questions:

---

*Prepare for listening*

1. *What type of message am I listening to?*
2. *My main purpose in listening is to. . .*
3. *The speaker's announced subject is. . .*
4. *The speaker's purpose is. . .*
5. *Things I already know about that subject are. . .*
6. *From this listening experience I will have to understand the following. . .*

---

OR

---

*Monitor your level of attention*

1. *Did I focus on the speaker and the message?*
2. *Did I put aside personal thoughts?*

3. *Did I check my biases?*

4. *Did I attend closely to verbal and nonverbal elements?*

5. *Did I listen to opening sentences that gave clues about the rest of the message?*

6 *Did I fake attention?*

7. *Did I label the subject as uninteresting?*

8. *Did I get overstimulated by some point within the presentation?*

---

ADDITIONAL IDEAS

Some other activities to help students practice and focus on listening skills include the following:

1. Creating tales: Have students weave a tale. Someone in the group starts a story and at a given signal stops. Another listener must pick up the tale and continue to weave the story. Some starters might include:

    - It was a dark and stormy night...

    - During hot summer nights, the air is filled with the sounds of insects. And if you listen carefully...

    - Carrie was one of those fourth graders that was so quiet in class that no one every paid much attention to her. Little did they know that...

    - Once upon a time in a faraway land, there lived a princess. But unlike other princesses...

2. Story cut-ups: Cut a story into different parts. Mix the pieces and pass them to the group. The student who thinks he/she has the first part of the story reads it. The others follow until all parts have been read.

3. Games: Games provide interesting practice in listening. Try some of the following:

    - Simon says
    - Rumor clinic
    - Twenty questions

4. Literature: Construct a drawing to describe a character from literature. Say to the students: "I'm going to read a description of ________ from ________ ______. Listen closely to the description, then draw as accurately and as fully as you can from all the details you hear and remember." After drawing, students can describe their pictures, recalling all the details they remembered.

5. Application: Other content areas can provide lots of opportunities for practice. In science, for example, provide students with a diagram of the digestive system. Leave blank spaces on the diagram for students to fill in as the information is provided in the lecture.

6 Log: Have students keep a listening log to write short descriptions of their daily listening experiences. Analyze each experience: What were some road blocks to successful listening? How did they overcome some of the barriers?

# LISTENING: VISUALIZATION/RETENTION

**WHAT** Creating mental pictures of what is being said helps a person to retain and store that information in long-term memory. When a picture is made up to go with a concept or idea, information is anchored in two separate parts of the brain, thus doubling the chances of the information being recalled. Mental visualizations also connect a series of facts.

**WHY** An effective memory is essential to learning and does more than enable one to recall information for an exam. An effective memory means the ability to produce the right information at the right time; to be able to connect new information with what is already known. It is related to one's ability to process new information quickly. Visualization is an effective technique that enhances comprehension and helps one store information in long-term memory.

**WHEN** Learning is enhanced when students have a variety of memory techniques in their repertoire that can be used in any given learning situation. Visualization can be practiced in primary through secondary grades.

**HOW** Steps for students:

Visualization can take many forms. In addition to creating mental images from words, the following techniques can be used:

1. To make an image vivid, create a picture with elements detailed and exaggerated, or visualize an item to be bigger than life.

2. Personalize an idea. For example, imagine that you are a star in our galaxy. How would you feel? What would you look like?

3. Like a camera lens, focus first on the entire idea or scene, then zoom in to a specific part or detail. Examine that detail carefully and then move back to the original scene.

## CONTENT:

Language arts

## GRADES:

Upper elementary - junior high

## VISUALIZATION/RETENTION

1. To teach "zooming in," do the following activity with the whole class or have students work in pairs. If you do the latter, have one partner read the passage to the other student. Ask students hearing the passage to close their eyes and visualize the following scene:

   > *Imagine a tall mountain just below three clumps of fluffy clouds. There is a sandy beach below, dotted with palm trees. Waves gently roll into shore. Three people are fishing. To the right of them a girl is body surfing. To the left of them two dogs play and roll in the sand.*

2. Ask students to begin to zoom into the image of the body surfer. Bring the image closer and focus on the details of the surfer. What is the surfer doing? Is the surfer enjoying a good ride on a wave? What does the person look like? Use your five senses.

3. Now ask students to move the scene back to its original position and open their eyes.

4. Discuss: Were you able to complete all the steps in the visualization? If you weren't, why not?

   - I didn't pay attention.
   - My mind was elsewhere.
   - I wasn't interested.
   - I couldn't understand, so I quit.

(Lesson taken from *The Survival Kit*, Hawaii English Program - Secondary. Honolulu: Department of Education, 1977.)

5. In addition, ask students to remember something they must bring to class tomorrow. Have them use one of four techniques to make the image more vivid:

   - SUBSTITUTION: Picture the item doing something that another item is supposed to be doing. For example, if you want to remember to bring your pencil, associate it with your shoe. Picture yourself wearing two pencils on your feet like shoes.

- OUT OF PROPORTION: Visualize the item to be bigger than life. For example, picture your pencil as you take it out of your pocket to be as long as a yard stick.

- EXAGGERATION: Exaggerate the item. Visualize yourself walking on hundreds of pencils.

- ACTION: Picture the item moving or doing something. Action is easy to remember. Picture the pencils breaking every time you try to write with them (Buzan 1984).

ADDITIONAL IDEAS

1. Have students create mental images from other word pictures. One good source for such pictures is *Dream Scenes* (Learning Works, Inc., 1983).

2. Provide students with starter visualization stories and have them create their own visualization using color, taste, touch, smell, sight, and sound.

3. Have students visualize content-related scenarios like this one:

| | |
|---|---|
| SCIENCE: | Imagine yourself as a newly planted bean seed in a styrofoam cup with soil.<br>Imagine that you are high in the sky and that you feel warm. You are the North Star.<br>You are part of a rain forest.<br>You are part of a busy community.<br>You are an ant. |
| MATH: | Take a word problem and generate a story from it. Visualize the problem and then go through the steps of solving it. |
| PHYSICAL EDUCATION: | In free throw basketball, close your eyes and visualize the movements in the throw. Then open your eyes and execute the throw.<br>The same procedure can be used for other sports such as golf (Mize, n.d.). |

# LISTENING:
# ACTIVE LISTENING

**WHAT** Hearing and listening are not synonymous. Listening is an acquired skill. It requires active participation, concentration, and thinking. Active listeners:

- keep their attention focused on what the speaker is saying, suspending judgment.
- focus attention on understanding the speaker's main ideas and supporting ideas/arguments.

**WHY** Active listening skills require the participation of the listener. By practicing active listening skills, the student will improve comprehension. These skills also help students retain more information as they remember facts, not in isolation but in relationship to a main idea or concept. The competent listener utilizes many of the same strategies of the competent reader.

**WHEN** The teacher plays a critical role in helping to facilitate comprehension through some of the stretegies identified below. These should be used as needed in primary through secondary grades.

**HOW** Steps for students:

Try to make sense of what the speaker is saying by:

1. Connecting what was heard to something already known. Associate the unknown with the known.
2. Visualizing what is being said.
3. Listening for key words that tell what is being said.
4. Listening to key words that tell about the order in which events occur.

5. Listening before deciding how you think or feel about what has been said.

6. Restating to yourself in your own words the speakers' main ideas.

## CONTENT:

Social studies

## GRADES:

Upper elementary - junior high

## ACTIVE LISTENING

1. Teach students to figure out how the presentation is organized. The organizational pattern can serve as a guide to listening. Have students then fit the details into the organizational pattern and make a whole message of what was heard. Some of the organizational patterns might include:

   - concept
   - generalization
   - sequence
   - process/cause
   - comparison/contrast

   (Also see "pattern recognition" strategy in chapter on reading skills, p. F-21.)

2. Point out that signal words help the listener understand how information is organized and provide clues about what is important.

   Examples:

   Change of thought: although, despite, on the other hand, nevertheless, otherwise, however, in contrast, though, however, instead of

   Order: first, second, third, next, the following, finally, in conclusion, best, least, in addition

   Comparison/contrast: however, much as, though, most, also, different from, similarly, on the other hand, conversely, either, more than, much as, however, different from

   Conclusion: as a result, hence, consequently, finally, therefore, in summary, last of all, hence

   Emphasis: a key feature, a major event, especially important, the crux of the matter, remember that, the principal point, it all boils down to (Fry 1985).

3. Also mention that some signals are nonverbal. Students need to listen to changes in the speaker's intonation, volume, phrasing, pauses. Nonverbal signals function

much like the punctuation at the end of a sentence, bold type, subheadings.

4. Provide guided practice using the following for organizing details around main ideas.

   Tell students that ideas can be organized in many ways. Have them listen to a teacher's lecture or a student's presentation and determine how the ideas are organized. Ask them to listen to the details and visualize what is being described or explained.

ADDITIONAL IDEAS

1. You may engage students in the following type of activity for additional practice.

   INSTRUCTIONS: Send six students out of the room. Bring them back one at a time. Read a paragraph to person number one in the series. Number one tells number two all the first student can remember. Continue until number six tells the group all that the student known about the paragraph. Observers should take note of the omissions, distortions, additions in the following message:

   > *Once, ever and ever so long ago, we didn't have any pink roses. All the roses in the world were white. There weren't any red ones at all, any yellow ones, any pink ones--just white roses. And one morning, very early, a little white rose woke up and saw the sun looking at her. He stared so hard that the little white rose bud didn't know what to do; so she looked up at him and said, "Why are you looking at me so hard?"*
   >
   > *"Because you're so pretty," said the big round sun.*
   >
   > *And the little white rose bud blushed. She blushed pink and all her children after her were little pink roses.*

   DISCUSSION:

   - How accurate was the retelling of the story?
   - What part of the story was changed from the original?
   - What things were added?
   - What was the main idea of the story? Was the main idea ever clearly stated?

- Would there have been confusion over details if the listener focused on the main idea--how we came to have pink roses?
- Can you generalize on one of the roadblocks to good listening?

2. Apply this strategy to any content area. Have students listen to a presentation. Ask them to identify the main ideas. Teach them to ask themselves questions as they listen to the message:

   - What is the speaker telling me?
   - Was the main idea explicitly stated?
   - Do I need to infer the main idea?
   - What are the supporting details?
   - How is the message organized?
   - What organizational clues do I hear?

# LISTENING: PREDICTION/VALIDATION

**WHAT** The purpose of predicting or questioning is to get students to think and wonder about what is coming up in a lecture or presentation. Doing this helps students set a purpose for listening and engages them in the listening process. As students listen, their questions are answered and predictions confirmed or invalidated.

**WHY** This process helps listeners set a purpose for listening and engages them in critical thinking.

It also motivates listening by arousing curiosity about the outcome of something. Students listen to achieve some sort of resolution between the known and the unknown.

**WHEN** It should be an integral part of every listening assignment in primary through secondary grades.

**HOW** Steps for students:

1. Listen for an overview of the speaker's message. What are the key points of the message?
2. Make a quick appraisal of what you already know about the topic and what further information you might need to know. Is there some idea you are uncomfortable with? Has the speaker posed a problem or dilemma that you might be called upon to suggest a solution to?
3. Formulate some questions to guide your listening based on your response to #2.
4. Listen for answers to your questions.
5. Reformulate these questions or pose new ones as the speaker presents ideas.

6. Reassess what you now know against what you didn't know at the beginning of the presentation.

## CONTENT:

Language arts, social studies

## GRADES:

Secondary

## PREDICTION/VALIDATION

1. Introduce the prediction/validation process by having students listen to the following short passage. Ask them to predict what the missing words might be. Based on the information given, they may at any time reconsider or change their answers.

> *The crowd was large and noisy. People hurried to their seats and looked down at the stage. They had paid good money to see this.*
>
> *A few minutes after eight, the lights dimmed and a hush came over the auditorium. Everyone strained his eyes to see the _________ enter. Popcorn and soda pop vendors stopped taking orders and stood in the aisles watching.*
>
> *A handsome man in a tuxedo stepped into the spotlight and held up his arms to stem the applause. "Ladies and gentlemen," he intoned, "the moment you've all been waiting for is here . We've had to make elaborate arrangements to get this _________ here, but once you see her, you won't be disappointed."*
>
> *The curtains parted and she stepped out. People gasped and kids climbed onto their parents' shoulders to get a better look. Her beautiful golden hair fell in waves as she shook her head and looked out at the audience.*
>
> *"Ladies and gentlemen, here she is, all the way from her home in Hollywood, the star of television and movies, the favorite of millions: Lassie."*
>
> (From *Directed Reading-Thinking Activities Teacher Manual*, Skills Lab Program for Grades 10-12, Hawaii English Program-Secondary. Honolulu: Department of Education, 1982.)

2. Provide guided practice by establishing a problem to be solved, a dilemma to be reconciled, or a question to be answered. Motivate students to seek the answer or resolution in the course of the listening.

ADDITIONAL IDEAS

1. Generic questions for prediction/validation might include the following:

   - What do I think the rest of the lecture will be about?
   - What aspect of the topic do I think will be covered in tomorrow's lecture?
   - What do I already know about the topic? Is my knowledge accurate? What more is there to know?
   - What new information can I add to what I already know?
   - What kind of details or reasons support the ideas presented in the lecture?
   - What is going to happen next?
   - Why do I think so?
   - Can I prove it?

2. Self-directed questions are powerful. Encourage students to develop their own questions based upon their curiosity and purpose for reading. Encourage students to set up their own problem or dilemma to be resolved.

3. The listening and reading processes share many common features and as such, many of the reading strategies can be adapted and used as listening strategies. An excellent resource is *Content Area Reading*, by Richard Vacca (Little Brown and Co., 1981).

# POST-LISTENING: LEARNING LOG

The same strategy is defined as a post-learning activity in the chapter on reading skills (p. F-35). Please refer to that section for explanations and a sample application.

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# *READING SKILLS*

## Pre-reading

- Attention control F-4
- Surveying F-8
- Skimming F-12
- Questioning F-18

## Reading

- Pattern recognition F-22
- SQ3R F-32

## Post-reading

- Learning log F-35

# BACKGROUND

One of the most common homework assignments is to study a chapter in a textbook. Few students have any method for accomplishing this task. Most plow through a chapter in much the same way they would a recreational novel or other forms of casual reading. Few utilize any kind of strategy to make learning more efficient.

In this chapter techniques are introduced to facilitate independent reading and learning from a textbook. It is aimed at the reader who is able to use prior knowledge and experience to understand a text; uses reading to gain new information or perspectives; and consciously employs strategies to facilitate comprehension. Use of the techniques should be introduced by the teacher, but the student should be encouraged to use them independently.

Some students may need additional help in developing their reading skills. Additional strategies can be found in three Department of Education guides: *Language Arts Strategies for Basic Skills, K-2; Comprehension in the Content Areas, K-6*; and *Comprehension in the Content Areas, 7-12.*

The strategies covered in this section are categorized as pre-reading, reading, post-reading strategies. The techniques are based upon behaviors of successful readers identified by research.

# PRE-READING: ATTENTION CONTROL*

**WHAT** Attention control is a strategy that helps students control and monitor their attention span by blocking out physical and emotional distractions that interfere with learning. Attention control helps students to consciously control their level of attention to meet the level of attention required by the task (Marzano and Arredondo 1986).

**WHY** Attention control helps students to become responsible for their learning and to develop better study habits. It helps the student develop a mental alertness which decreases the amount of study time and increases the amount of learning.

**WHEN** This skill should be taught at the outset of a unit and reinforced throughout the year in primary through secondary grades.

**HOW** Steps for students:

1. Become aware of how well you are paying attention to tasks in general.
2. Identify the amount of attention required for the reading assignment.
3. Compare your attention level with that required by the assignment.

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* This strategy is also included in the chapters on listening (p. E-8) and on media-utilization skills (p. H-5). A related strategy, "concentration," appears in the chapter on study habits (p. D-21).

4. Concentrate on raising your attention level by raising your energy level, bracketing distracting thoughts, and looking for meaning.

## SAMPLE APPLICATION

### CONTENT:

All content areas

### GRADES:

Elementary - secondary

### ATTENTION CONTROL

1. Introduce the skill by doing one of these simple activities:

    - Have students focus their attention on some stimulus (i.e., an object in the room). Explain to them that you want them to focus all of their energy for about a minute and ask them to be aware of what it is like when they are really trying to attend to something.

    OR

    - Describe a time when your attention has been so intense that you've blocked the rest of the world out (e.g., in sports, working on a hobby).

2. Provide guided practice using the following procedure with students:

    To help you focus your attention, practice "bracketing":

    - Select a few pages from your social studies, science or other content area text to study. Be prepared to summarize what you read.
    - Before you begin reading, on individual slips of paper jot down thoughts that you need to"bracket," or put aside. Visualize yourself storing those thoughts until you have completed your task.
    - Begin reading.
    - If you find yourself straying from your task, identify the distraction and "bracket" it. Again visualize yourself storing those thoughts away until you have completed your task.
    - Come back to the task by asking yourself to summarize what you've read thus far.
    - Describe some of the thoughts you had to "bracket."
    - Explain what you did to deal with the distraction.

- Retrieve the thoughts you "put away." Now take a few minutes to deal with those thoughts.

3. Provide additional practice if needed using the following activities:

    - Develop a procedure for attention control. Provide practice periodically.

    - Identify a task that receives your full attention. Analyze your energy level during those moments. What happened during those moments? Apply the same process to a reading homework assignment.

4. Apply the process of attention control to content area reading assignments.

ADDITIONAL IDEAS

Teachers can help students develop attention control by doing the following:

1. Model "bracketing." Guide students through the process as they do in-class reading. Develop check points during the reading to help them monitor their attention and energy.

2. Encourage students to practice attention control as they do their homework assignments. They may develop techniques that work for them, and, if so, be willing to share their strategies with the class.

3. Reinforce the development of attention control by having students reflect on their experiences through a learning log or journal. The ultimate goal is self-sufficiency and personal responsibility for learning.

# PRE-READING: SURVEYING*

**WHAT** Students who survey a text or chapters get an idea of what to expect in the reading. Writers usually provide organizational aids that help students to survey the book or chapter. For example, in looking at the table of contents, the reader gets a general impression of the content. The table of contents provides a scope and sequence of ideas; it also shows relationships between ideas and helps readers to distinguish "the forest from the trees" so they won't get lost in details. Organizational aids include:

- table of contents
- preface
- chapter introductions
- chapter summaries
- chapter titles
- headings and subheadings
- words, phrases or sentences in special type
- pictures, diagrams, illustrations, charts and graphs
- date of publication.

**WHY** Surveying is an organizational strategy that gives students a handle on the material to be read. By surveying the material, the student becomes acquainted with its content and its main ideas and is less apt to become lost in details.

**WHEN** Surveying is a prerequisite to the actual reading of a chapter. Students should practice and use this strategy for informational reading. It can be taught, as appropriate, from primary through secondary grades.

Surveying will help students examine a source to determine if it will be useful. Surveying saves a lot of time.

---

* This strategy is also included in the chapter on research skills (p. J-11).

**HOW** Steps for students:

1. Read the title of the book, chapter or unit.
2. Convert it into a question to be answered in the course of the reading.
3. Read the introduction, summary and questions at the end of the chapter or unit. If reading a novel, read the preface and introductory comments on the jacket of the book. What seems to be the author's main points?
4. Read the headings and subheadings. Convert them to questions.
5. Read what has been printed in special type. Why are certain words, phrases, or sentences highlighted?
6. Study visual materials such as pictures, maps and diagrams. What do the graphics tell you about the chapter's content? (Vacca 1981).

## SAMPLE APPLICATION

### CONTENT:

Science

### GRADES:

Elementary - Secondary

### SURVEYING

1. Introduce the concept of surveying by telling students that it is a strategy to help them identify what a chapter is about and how it is organized to make reading easier.

2. Guide them through the following process, adapting it according to the needs and abilities of students and the demands of the text:

   - What is the title of the chapter? From the title what do you think the chapter will be about?

   - How does it relate to the chapters before it? after it?

   - Do these chapters have introductions and summaries? Write one or two sentences that summarize each.

   - Is the chapter we started with divided into subtopics? Phrase each one as a question which could be answered by a careful reading of the section following it.

   - After surveying the chapter, complete the following statements: (These would make good entries into a learning log.)

     - Something I want to learn from this chapter is. . .

     - The thing that most interests me about this chapter is. . . .

     - Things I already know about this topic are. . . .

3. Reinforce surveying by having students use this strategy with each chapter before reading.

ADDITIONAL IDEAS

1. Also see the SQ3R method described in this chapter.
2. For an elaboration of surveying skills and procedures see *HM Study Skills Program, Level I*, by Candace Burkle and David Marchak (National Association of Secondary School Principals, 1982).
3. Encourage students to use this strategy with assignments in other content areas.

# PRE-READING: SKIMMING

**WHAT** Skimming involves a quick perusal of the assigned reading to identify the main ideas and to form an overview of the reading assignment. The overview helps students predict the appearance of facts and organize the information as they read.

**WHY** Students often jump into reading without a strategy or direction. They plow tediously through the pages. All information is treated the same way. Main ideas and details are not differentiated and learning consists of remembering insignificant details. Skimming works because:

- Students read faster when they know the territory.
- Students remember better when they have the information organized in their mind.
- Students are less likely to drift away mentally when they know where they are going.
- Students are less likely to become bored when engaged in the reading process.

**WHEN** Skimming is a pre-reading strategy that should be utilized for all study/reading assignments from upper elementary through secondary grades. The independent reader uses this skill as a strategy to increase comprehension.

**HOW** Steps for students:

1. Before reading, skim through the entire selection rapidly. Zip through every page using a zig-zag pattern without getting hung-up on any one section. Don't be afraid to leave out large parts of a paragraph.

2. Look for high information words--words that carry the content of the selection.

3. Read the first sentence of each paragraph. The first sentence often contains a topic statement or important idea. If the first sentence tells you nothing, look toward the middle and end of the paragraph.

4. Watch for signal words that designate the introduction of a new idea, change in thought, a summary or conclusion.

5. Read the ending paragraph more carefully--it might contain a summary.

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Secondary

## SKIMMING

1. Introduce skimming as a strategy to help students read faster and remember better. (See pp. F-16 and F-17 for an overview of skimming.)

2. Take students through the following process:

   - Skim through the chapter.
   - Identify topic sentences, key words, summary statements, titles and subtitles.
   - Read the first sentence of each paragraph.
   - Do not take more than a minute. If you skimmed the article, your pattern should have looked something like this:

> *Should your state carry out death sentences?*
>
> *Background. For 556 ........................death row. ...............execution....1979 ...............second in twelve years.*
>
> *...............abolitionists.....reduced executions from a high point of 200 in a year in 1930's...............one in 1966................two in 1967....moratorium...............NAACP........... ...................discriminatory......*
>
> *Fruman v. Georgia...............U.S. Supreme Court struck down ..............."cruel and unjust punishment".*
>
> *Thirty-seven states...............capital punishment....deter..............no statistical evidence...............death sentences protect victims. ..............increase in violent crime..............since moratorium.*

- Answer the following questions:

  - Did you capture the general flavor of the article?
  - What is the subject of the article?
  - What is the purpose of the article?
  - What are some of the main ideas?
  - What are some of the key social studies words?
  - How is the article organized?
  - Summarize what you know.

- Now read the article and relate the details to the main ideas you've identified. Try outlining or mapping as you read.

3. Reinforce skimming by having them use this strategy with other chapters.

## OVERVIEW OF SKIMMING

This illustration gives a good picture of skimming. In order for students to become proficient at skimming, they need lots of practice. Twice a week for half a year isn't too much.

Usually the first paragraph will be read at average speed all the way through. It often contains an introduction or overview of what will be talked about.

Sometimes, however, the second paragraph contains the introduction or overview. In the first paragraph, the author might just be "warming up" or saying something clever to attract attention.

Reading a third paragraph completely might be unnecessary but ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
.. ... ... ... ... ... ...
.. ... ... ... ... ... ...
.. ... ... ... ... ... ...
the main idea is usually contained in the opening sentence. ... ... ... ...
... ... ... ... ... ...topic sentence ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Besides the first sentence, the reader should get some but not all the detail from the rest of the paragraph ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... names ...
... ... ... ... ... ... ...
... ... ... date ... ... ...

... ... ... ... ... ... ...
... ... ... ... ... ... ...
This tells you nothing ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
hence, sometimes the main idea is in the middle or at the end of the paragraph.

Some paragraphs merely repeat ideas
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Occasionally the main idea can't be found in the opening sentence. The whole paragraph must then be read.

Then leave out a lot of the next paragraph ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... to make up time ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Remember to keep up a very fast rate
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... 800 w.p.m....
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Don't be afraid to leave out half or more of each paragraph ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

### OVERVIEW OF SKIMMING (cont.)

... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Don't get interested and start to read everything ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
skimming is work ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Lowered comprehension is expected ...
... ... ... ... ... ... ...
... ... ... 50% ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... not too low
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Skimming practice makes it easier
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... gain confidence ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...

Perhaps you won't get anything at all from a few paragraphs ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... ... ... ...
... ... ... ... don't worry
... ... ... ... ... ... ...
... ... ... ... ...

Skimming has many uses ... ...
... ... ... ... ... ... ...
... ... ... ... reports ...
... ... ... ... ... ... ...
... ... newspapers ... ... ...
... ... ... ... ... ... ...
... ... ... ...supplementary...
... text ... ... ... ...

The ending paragraphs might be read more fully as often they contain a summary.

Remember that the importance of skimming is to get only the author's main ideas at a very fast speed.

(From *The New Reading Teacher's Book of Lists*, by Edward Bernard Fry, Ph.D., Dona Lee Fountoukidis, Ed.D., Jacqueline Kress Polk, M.A. ©1985. Reprinted by permission of the publisher, Prentice-Hall, Inc., Englewood Cliffs, N.J.)

# PRE-READING: QUESTIONING*

**WHAT** Questioning can be used as a study technique to build anticipation about the material to be read. The questions will keep the reader on course and make reading more meaningful. Two of the most appropriate questions are "What do I need to know?" and "How well do I already know it?"

"What do I need to know?" prompts readers to make predictions and set purposes. "How well do I already know it?" helps readers to search their experience and knowledge to give support to tentative predictions (Vacca 1981).

**WHY** Mature readers study content materials purposefully and deliberately. Raising questions helps students develop into mature readers. It helps students to read more purposefully and with greater motivation and anticipation.

Asking and answering questions is a powerful tool that actively involves students in what they are learning and helps them focus on what is important.

**WHEN** Raising questions is a prerequisite to reading in primary through secondary grades. Students should be encouraged to use the skill independently.

---

*This strategy is also included in the chapter on media-utilization skills (p. H-6).

**HOW** Steps for students:

1. Look at the organization of the chapter to be read. Textbook writers give hints by using boldface type or other visual cues. Other organizational aids include the table of contents, preface, chapter introductions and/or summaries.
2. Search for main ideas while analyzing the organization of the chapter.
3. Turn chapter headings into questions.
4. Ask yourself: "What do I already know? How well do I know it? What do I need to know? What do I want to get from the reading?"
5. Based on the answers to those questions, anticipate what will be read. Find out what you don't know. Validate what you anticipated about what was to be learned as you read.

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Secondary

## QUESTIONING

1. Have students look at the organization of the chapter to be read. Textbook writers give hints by using boldface type or other visual cues. Other organizational aids include the table of contents, preface, chapter introductions or overviews, and summaries.

2. Have them identify major headings and subheadings. Turn them into questions to be answered in the reading.

   Sample: Social studies
   Unit 3: "Exploring the new world"
   (JoAnne Buggey, *Our United States*, Follett, 1983.)

   Major headings include:

   Voyagers of long ago
   Wanted: a route to the Indies
   Columbus plans his voyage
   The voyages of Columbus

   Translated into questions:

   Were there explorers before Columbus?
   Was the discovery of America accidental?
   How did Columbus plan for his exploration?
   What happened on Columbus' voyages?

3. Explain that subheadings can also be translated into questions:

   VOYAGERS OF LONG AGO (Who were the early explorers of North America?)

   The Chinese (Were the Chinese able to cross the Pacific?)

   The first Europeans in North America (Who were the first Europeans to explore North America?)

   The Norse (Who are the Norse? Did they settle North America?)

4. After developing questions, have students answer the following questions:

   - What do I already know?
   - What do I want to get from the reading?
   - (At the end of the reading) What did I learn? What more do I need to learn?

ADDITIONAL IDEAS

1. Teachers can model the questioning process using Directed Reading-Thinking Activities (DRTAs). DRTA is a strategy for guiding students in reading through a questioning/proessing/validating process. The ultimate goal is to have students practice the questioning/validating process independently.

   Fuller explanations and procedures appear in *Language Arts Strategies for Basic Skills, K-2* (Department of Education, 1979).

2. The questioning strategy is incorporated into SQ3R which is also included in this chapter (p. F-32).

# READING:
# PATTERN RECOGNITION*

**WHAT** Pattern recognition is a strategy for identifying organizational patterns in information that is read or heard (Marzano and Arredondo 1986).

**WHY** Comprehension will be enhanced if students can find order or structure in everything they read. By organizing information, students can more easily identify concepts and main ideas, relate ideas and see relationships between ideas. As students see relationships between the ideas in one paragraph and the next, a more inclusive idea or inference is developed.

**WHEN** Comprehension is enhanced when students can identify and use a pattern to guide their reading. This strategy is appropriate for upper elementary through secondary grades. Knowing organizational patterns is also a prerequisite to note-taking.

**HOW** Steps for students:

1. Skim the passage or chapter in order to identify an organizational pattern. Authors usually give readers clues to help them figure a pattern. A signal may be a word or phrase that helps the reader follow the writer's thought.

2. Identify the predominant pattern (see pp. F-24 to F-28 for details).

3. Begin reading the chapter.

---

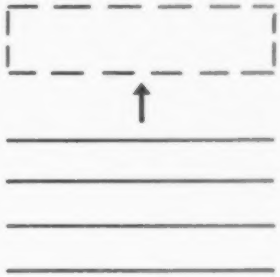
[*] This strategy also is included in the chapters on note-taking/outlining (p. I-24) and research skills (p. J-36).

4. As you read, identify the main ideas using the organizational pattern.

5. Map the details around the main ideas.

# BASIC ORGANIZATIONAL PATTERNS

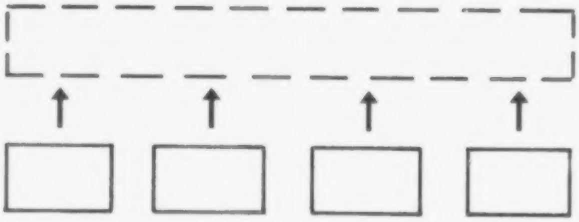
1. **CONCEPT PATTERNS**: Describe the characteristics of a single concept (word or phrase). They are commonly about persons, places, things and events.



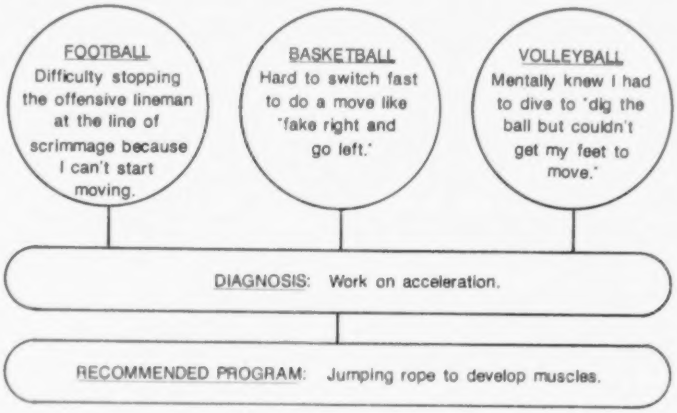
Some note-taking formats often used for concept patterns are columns, grids, and webs (mapping). The following example from physical education looks at the concept of resistance in terms of the components that affect it using a column format.

| CONCEPT | COMPONENTS |
|---|---|
| Resistance (Body Kinetics) | Body lean (angle)<br>Equipment<br>Terrain |

2. **GENERALIZATION PATTERNS**: Describe a set of statements that has an example relationship with a single generalization.



Some common note-taking formats used are column charts and webs. The following example from physical education shows a web that was made after a student identified specific problems encountered in three different sports.



FOOTBALL
Difficulty stopping the offensive lineman at the line of scrimmage because I can't start moving.

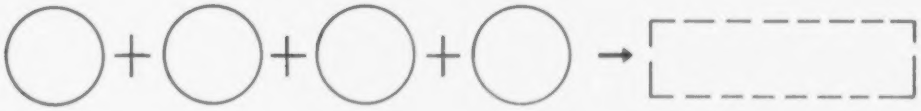
BASKETBALL
Hard to switch fast to do a move like "fake right and go left."

VOLLEYBALL
Mentally knew I had to dive to "dig the ball but couldn't get my feet to move."

DIAGNOSIS: Work on acceleration.

RECOMMENDED PROGRAM: Jumping rope to develop muscles.

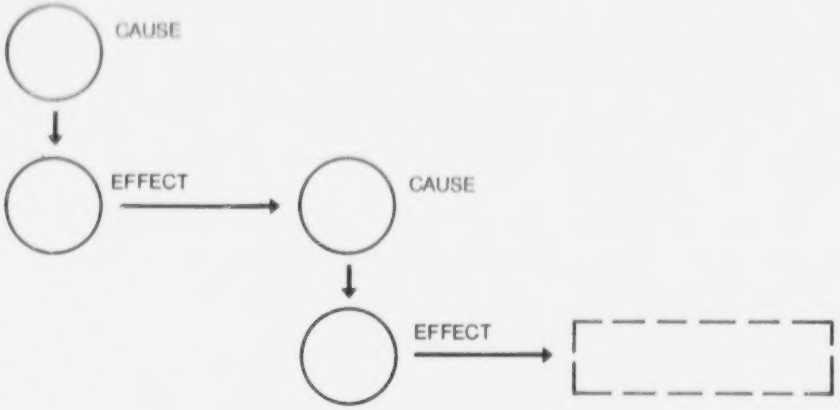
3. **SEQUENCE PATTERNS**: Use repeated time relationships as the basic link among statements.



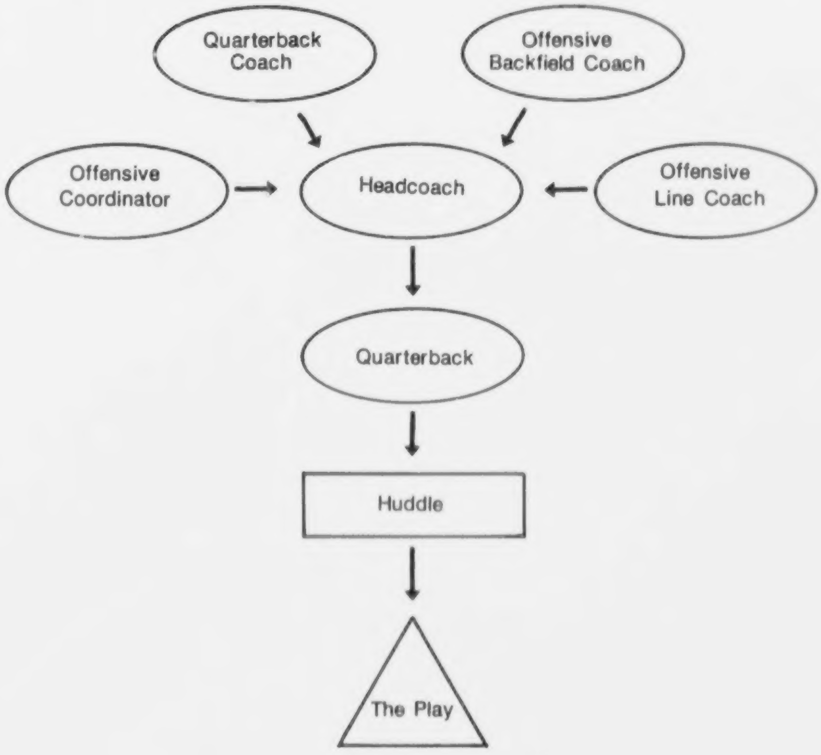
Some common note-taking formats used for the sequence pattern are numerical lists, flow charts and time lines. The following is an example of a time line highlighting important dates in football.

| AMERICAN | FOOTBALL |
|---|---|
| 1869 | 1st intercollegiate soccer-type match (Princeton vs Rutgers, 6-4) |
| 1875 | 1st rugby-type match (Harvard defeated Yale, 4-0) |
| 1876 | Intercollegiate Football Association founded by Columbia, Princeton, and Harvard |
| 1880 | Switch from "scrum" scramble to one team possession of ball |
| 1883 | Scale of scoring values established |
| 1905 | Presidential meeting called to abolish football |

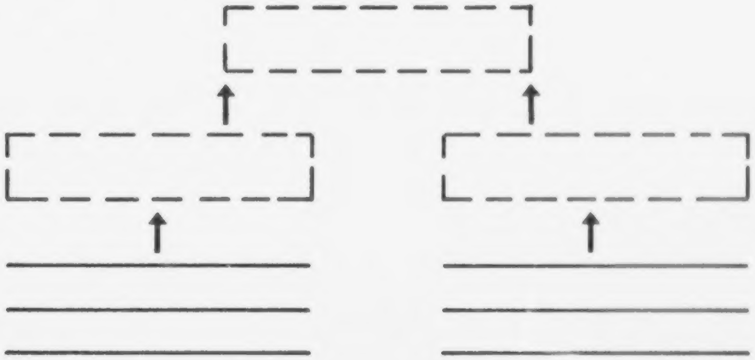
4. **PROCESS OR CAUSE PATTERNS**: Identify the causes of an event or the specific process for making something happen.


CAUSE
EFFECT
CAUSE
EFFECT

Some common note-taking formats used are numerical lists, flow charts and column charts. The following example from sports shows one type of operational structure followed in game planning.

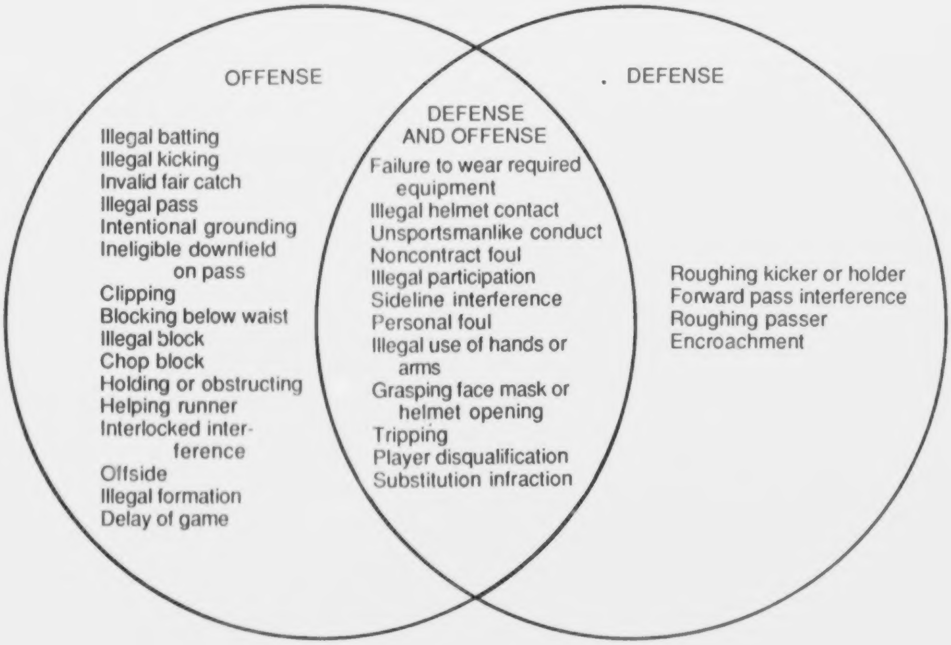

Quarterback Coach
Offensive Backfield Coach
Offensive Coordinator
Headcoach
Offensive Line Coach
Quarterback
Huddle
The Play

5. **COMPARISON AND CONTRAST PATTERNS**: Describe contrast relationships between a group of items or ideas that are similar with a group of items or ideas that are dissimilar.



Some common note-taking formats are columns, charts, graphs and venn diagrams. The example below presents the different constraints imposed on the offensive and defensive teams in football in a venn diagram.

**VENN DIAGRAM: CONSTRAINTS OF OFFENSE & DEFENSE TEAMS IN FOOTBALL**



OFFENSE

Illegal batting
Illegal kicking
Invalid fair catch
Illegal pass
Intentional grounding
Ineligible downfield on pass
Clipping
Blocking below waist
Illegal block
Chop block
Holding or obstructing
Helping runner
Interlocked interference
Offside
Illegal formation
Delay of game

DEFENSE AND OFFENSE

Failure to wear required equipment
Illegal helmet contact
Unsportsmanlike conduct
Noncontract foul
Illegal participation
Sideline interference
Personal foul
Illegal use of hands or arms
Grasping face mask or helmet opening
Tripping
Player disqualification
Substitution infraction

DEFENSE

Roughing kicker or holder
Forward pass interference
Roughing passer
Encroachment

# SAMPLE APPLICATION

## CONTENT:

Economics, health, biology, social studies

## GRADES:

Secondary

## PATTERN RECOGNITION

1. Share the following examples which may be used in helping students see organizational patterns which provide a frame of reference for reading.

2. Develop the visual diagrams together.

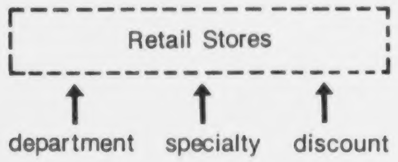
Example 1: Economics

*There are several kinds of retail stores: department stores, specialty stores, and discount stores. Department stores are generally large and offer a wide variety of goods at different prices. Most also offer many customer services, such as charge accounts, and allow you to return goods. Department store prices are generally higher than prices at discount stores, however.*

*Specialty stores, such as boutiques, offer a broad selection of one kind of merchandise, but they may charge higher prices than department stores. Discount stores generally have a wide choice of goods at the lowest prices. But they offer few customer services, have few salespeople to help you, and may not allow any returns.*

(From *The Consumer in America*, Copyright ©1979 by Harcourt Brace Jovanovich, Inc. Reprinted by permission of the publisher.)

CLASSIFICATION:



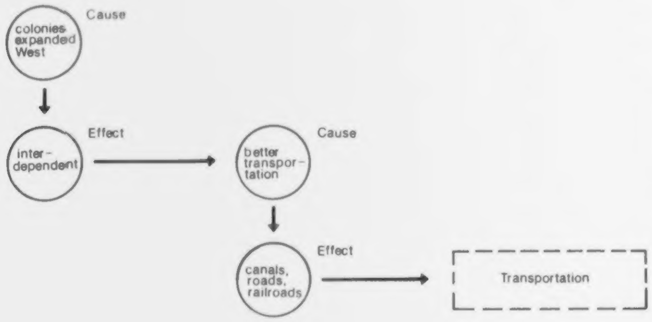
Example 2: Social studies

*The transportation needs of the early colonists were fairly simple. The colonists who settled on the Atlantic seacoast or along major rivers used these natural waterways as means of transportation. There was little interaction between settlements, and what overland travel there was often followed ancient Indian footpaths. Only as the colonies grew, pushed westward, and became interdependent did the need for better means of transportaion develop.*

*As the need arose, the colonists built roads connecting towns and settlements. No longer relying simply on nature's waterways, Americans built a network of canals. Eventually, they built a railroad to cross the continent. The distant parts of the land were linked together in one great nation.*

(From *The Rise of the American Nation.* Copyright ©1982 by Harcourt Brace Jovanovich, Inc. Reprinted by permission of the publisher.)

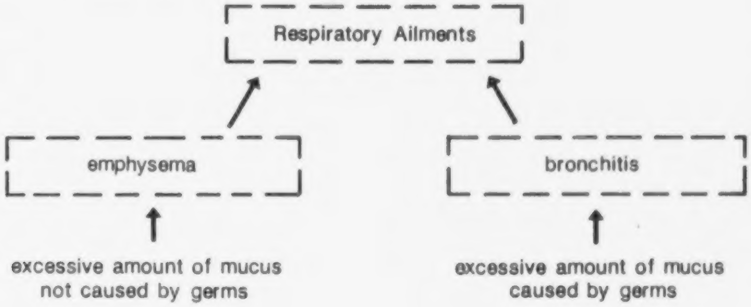
CAUSE/EFFECT:


Cause
colonies expanded West
Effect
inter-dependent
Cause
better transpor-tation
Effect
canals, roads, railroads
Transportation

Example 3: Health

*Bronchitis, like emphysema, is caused by great amounts of mucus being produced in the bronchial tubes. Unlike emphysema, however, bronchitis seems to be the result of certain kinds of germs.*

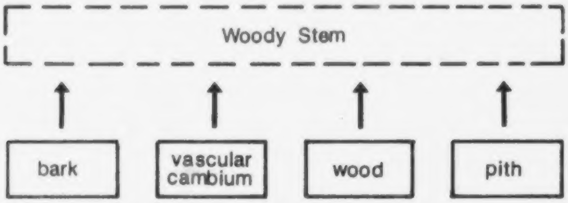
COMPARISON/CONTRAST:


Respiratory Ailments
emphysema
bronchitis
excessive amount of mucus not caused by germs
excessive amount of mucus caused by germs

Example 4: Biology

*A really woody stem has several distinct layers. The outermost layer is the bark. If you cut into the bark, you will find the wood. During a plant's first year, another layer grows between these two areas. This layer, called the vascular cambium, makes the bark and wood grow thicker each year. Finally, at the center of the stem is the pith. It does not grow in size and it may be hard to find because there is so little of it compared to the wood surrounding it.*

PART/WHOLE:


Woody Stem
bark
vascular cambium
wood
pith

# READING: SQ3R

**WHAT** SQ3R is a study system which includes five steps: survey (S), question (Q), read, recite and review (3R). The SQ3R system provides students with an organized method of study which results in greater efficiency and retention.

**WHY** The process stimulates the reader to become an active participant in the learning process. Reading becomes more purposeful and more meaningful. The SQ3R method is designed to make the most of the way memory works. It also provides some useful notes that can be used for later study.

**WHEN** The various skills can be taught gradually and then integrated to form a study system in upper elementary through secondary grades. (See other sections of this chapter on surveying, skimming, questioning.)

**HOW** Steps for students:

1. Before reading, SURVEY the reading assignment. Look at chapter headings, subheadings, overview, introduction, summary and table of contents. Discover how the chapter is organized. Develop a chapter map.

   Consider broader questions: What is the main point of this selection? How are the ideas organized? What are some ideas that caught my attention? What are some things I would like to find out about?

2. Predict QUESTIONS that may be answered in the reading. This might be done section by section.

   One technique is to change headings into questions using words like who, what, which or why.

   Another approach might be to read a section carefully and then write questions. A second reading may be needed to locate and write specific answers.

3. READ to find answers to the questions. Look for main and supporting ideas which explain, describe, tell more about or prove the main idea.

   Take notes in some form while reading. This will help you not only to identify main and supporting ideas, but also to understand the relationships of the parts to the whole.

4. RECITE (and write) what you learned. Focus on the main concepts and supporting information. Recite section by section. Immediate recall helps establish connections with what was read. Writing what was recited provides a record of what was read and can be used for reviewing a chapter or studying for an exam.

5. Mentally REVIEW what you read. Go over the questions and try to recite the answers.

# SAMPLE APPLICATION

## CONTENT:

All content areas

## GRADES:

Elementary - secondary

## SQ3R

See sample applications under surveying, skimming, and questioning in this chapter.

It is suggested that students be taught these various skills separately and then be shown how they are integrated to form a study system.

ADDITIONAL IDEAS

1. It is important to make students aware of their own learning. Periodically have students identify changes they have made in their study procedures, their reactions to a study system, and any improvements in their grades. Some students may have made their own modifications to the SQ3R system. Encourage them to talk about and share what works for them.

2. Some additional resources are:

   Bragstad, Bernice Jensen and Sharyn Muller Stumpf. *A Guidebook for Teaching Study Skills and Motivation.* 2d ed. Newton, MA: Allyn and Bacon, 1982.

   Marshak, David. *HM Study Skills Program, Level II.* Reston, VA: National Association of Secondary School Principals, 1982.

   Spache, George and Paul Berg. *The Art of Efficient Reading.* 3d ed. New York: Macmillan, 1978.

   Witte, Pauline L. *A Guidebook for Teaching Reading.* Newton, MA: Allyn and Bacon, 1985.

# POST-READING: LEARNING LOG*

**WHAT** Writing provides a fundamental support for reading. It extends interaction with the ideas presented in the text after the reading is completed. It can also help students to connect their previous knowledge and experiences with the subjects they are studying, thereby increasing learning and retention.

A learning log is a collection of student writing which is done routinely and systematically. The writing, usually freewriting, can occur at any point in a lesson or reading. The writing can take many forms--narratives, quotes, essays, scribbles, charts, webs, dialogues, rebuttals, opinions.

Learning logs might include summaries of what was read; questions about what might be unclear or confusing; a paraphrase of what was read; an explanation to another person of what was just learned; predictions of what is to follow; or a reflection of how the student went about reading the selection and the moment when things finally made sense and "came together."

**WHY** The learning log encourages thought and learning and extends thinking beyond the text. It also stimulates discussion, clarifies uncertainty and stimulates the search for new ideas and relationships. It allows students to learn more efficiently by providing opportunities for them to experiment with thoughts and ideas. It can also be used as a tool for teachers to use to monitor student progress in understanding concepts and processes being taught.

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* This strategy is also included in the chapters on listening (p. E-27), media-utilization (p. H-33) and test-taking skills (p. K-5).

**WHEN** The learning log is an activity which can be used throughout a unit of study, when another look at material is necessary. This utilization of writing as a tool for learning is applicable in primary through secondary grades.

**HOW** Steps for students:

1. After receiving new information, or old information with new details, write to a question posed by the teacher (the writing prompt).

2. Based on the writing prompt restate main points, move beyond ideas covered as you add your experiences or what you already know, or examine ideas for validity. A primary aim here is to gain a better understanding of content.

3. Eventually, create your own learning logs with writing prompts provided by both your teacher and yourself.

# SAMPLE APPLICATION

## CONTENT:

Science,
social studies,
mathematics

## GRADES:

Elementary - secondary

## LEARNING LOG

1. Have students bring a notebook to use for their learning log.

2. Inform students that the purpose of the log is to record their thoughts about what was read, how learning is progressing, and their reactions to things.

3. Encourage students to write freely and openly. They will be writing for themselves--to explore ideas without the constraints of correctness. The logs are not to be corrected, so students should not worry about revising or editing. (Note: Teachers should not grade the logs and can read them as they choose. The learning log is merely a record of thought.)

4. The teacher may provide writing prompts such as the following:

   General

   - What did I learn from the reading?
   - What puzzled me?
   - What more do I need to know about the subject?
   - What are some ideas I disagree with?
   - What were some ideas I already knew?
   - How did I proceed through the reading?
   - What was one of the most interesting things I discovered?
   - What did I get stuck on?
   - What did I disagree with?
   - What was a quote that I want to remember?
   - What would I like to discuss most with someone?
   - What are some questions that I have?
   - How would I explain what I just learned to another person?
   - How do I feel about this topic?
   - What words, sentences or ideas caught my attention?
   - What prejudices did I have about this topic and what do I think now?

Specific

- You are a mollusk. Write about your experience.
- You are a blood cell. Discuss your travels through the human body.
- What would Columbus say to Queen Isabella to convince her to finance his expedition?
- Describe Captain Cook from the native's point of view.
- List all the things you know about factoring.
- Write about one of the math problems you could not solve in this chapter.
- Describe another way to solve one of the math problems in the text.

5. The logs may be written in class or at various points during a reading homework assignment. Only short amounts of time should be given, e.g., 5-15 minutes.

ADDITIONAL IDEAS

1. Learning logs should be used as part of the class routine. Systematic use will help students recognize this as a helpful tool that is a natural part of their learning.

2. Some additional resources are:

   Fulwiler, Toby. *Teaching with Writing.* Upper Montclair, N.J.: Boynton Cook Publishers, Inc., 1987.

   Pradl, Gordon M. and John S. Mayher, "Reinvigorating Learning Through Writing." *Educational Leadership* 42:5 (February 1985): 4-6.

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# *VOCABULARY SKILLS*

## Structural analysis

- Roots G-5
- Root words G-7
- Suffixes G-7
- Prefixes G-9
- Etymology G-10

## Context clues

- Formal definition G-12
- Example G-12
- Description G-12
- Comparison and contrast G-12
- Inferences G-12

## Vocabulary expansion

- Synonyms G-16
- Antonyms G-18

## Concept attainment

- Concept attainment G-19

# BACKGROUND

The development of vocabulary and language is all encompassing. It is learning based upon students' exposure to reading in all content areas, to media, to conversations, and to a multitude of experiences encountered in their daily activities.

Although students are immersed in a world of spoken and written language, they are not always successful in properly receiving, storing, and using this language. The strategies presented in this chapter are just some of the tools that students could use to learn and internalize new vocabulary.

Underlying all efforts to develop vocabulary is the development of a genuine curiosity and respect for words and their powerful and creative uses. The teacher plays a critical role in helping students acquire the necessary skills to expand their own mastery of language. The integration of these skills into on-going instruction is a valuable first step in helping students develop a lifelong love for language and its power in their lives.

# STRUCTURAL ANALYSIS

**WHAT** Structural analysis is a process used to analyze and synthesize the component parts of a word to get to its final meaning. The component parts include roots, root words, prefixes, suffixes and etymology.

**WHY** The study of the structural components of a word gives students a definite tool to work independently in increasing their own vocabulary. It helps students see relationships that exist among words and helps them to analyze words structurally to get at their meanings.

**WHEN** It is most meaningful to have students analyze new words as they occur naturally in a content area from primary through secondary grades.

**HOW** Steps for students:

1. Try to figure out the meaning of a word, looking for clues around the unknown word (context clues).
2. If you are unable to use context clues, look at the word to see if there are any component parts (prefix, suffix, root, etc.) that you already know. Use these known component parts, to try unlocking the meaning of the word.
3. Test these meanings in the given context. Does it make sense?

# SAMPLE APPLICATION

**CONTENT:**

Language arts

**GRADE:**

Upper elementary-secondary

## STRUCTURAL ANALYSIS/ ROOTS, PREFIXES

1. Define or reinforce the meanings of root and prefix:
    - Root: the part of a word that contains the basic meaning of the word. A root is usually one syllable and is not a word by itself.
    - Prefix: a letter or a group of letters added to the beginning of a word or root. Prefixes often change the meaning of the root words.
2. Present roots and prefixes to show word formation:
    - Write a familar word like inject on the board.
    - Discuss the following with students:
        - What does inject mean? (To throw, drive or force into something like forcing liquid into an arm.)
        - When a rifle is fired, the cartridge is ejected from the chamber. What does eject mean? (It's thrown out since the prefix "e" or "ex" means out.)
        - A movie projector projects an image on the screen. (Pro means forward; the image is thrown forward.)
        - Think of other "ject" words:

          Write these words on the board.

          Discuss the meaning of each with the aid of a dictionary, if necessary.
        - Help students come to the conclusion that the root "ject" means to hurl, to cast, or to throw. Emphasize that knowing the meaning of roots and prefixes helps to get to the meanings of words.

ADDITIONAL IDEAS:

1. Have students work with a variety of words so they will see how roots can appear at the begining and ending or in the middle of words.

2. A list of about a thousand roots and derived roots are presented in the appendix of *Techniques of Teaching Vocabulary* by Edgar Dole and Joseph O'Rourke (Field Educational Pub., 1971). Also check with your school librarian for other appropriate and more current resources.

## CONTENT:

Science

## GRADES:

Upper elementary-secondary

## STRUCTURAL ANALYSIS/ ROOT WORDS, SUFFIXES

1. Define and expand on the meanings of root words and suffixes:

    - Root word: the part of a word that contains the basic meaning of a longer word. A root word is usually a word by itself. (This differs from "root"; see p. G-5.)

    - Suffix: a letter or a group of letters added to the end of a root or root word. Its most important use is to change root words from one part of speech to another.

2. Help students understand that one needs to know the meaning of root words and suffixes to get to the meanings of certain words:

    - Write the word zoology on the board. Discuss the meaning of zoology. Help students analyze the components. Underline "zoo" and "logy". Students may want to use the dictionary.

    - Discuss how the suffix "logy" means "study of" or "science of."

    - Allow students to think of other words that use this suffix. Analyze each suffix and root word to understand how one suffix can be added to other words to form new words. Underline root words in pencil, the suffix in colored ink.

3. Using the same approach, explore the Greek suffix "itis."

    - The Greek suffix "itis" refers to diseases. It means inflamation when joined to a Greek root "arthr" (a joint). Thus, the word arthritis, an inflammation of the joints.

    - Ask students to think of as many words as possible with the suffix "itis."

meningitis
encephalitis
tonsilitis

- Explain how the suffix "itis" is often humorously coined to express a sort of fictitious disease like fumbleitis. Have students write a humorous account of a person suffering from a newly coined phrase of "itis." For example, people who spend all their leisure at the computer may be suffering from computeritis.

ADDITIONAL IDEAS:

1. It would help students to see the relationship among words in a "family" if those words are visually presented on a chart or on the chalkboard.

   Example: local
   locally
   locate
   location
   locality
   localize
   dislocate
   locus

   Explain all these words come from the Latin word, locus, meaning place. The root of all these words is "loc."
2. A list of over 200 common suffixes and their derived words appear in the appendix of *Techniques of Teaching Vocabulary*, by Edgar Dale and Joseph O'Rourke (Field Educational Pub., 1971). Also check with your school librarian for appropriate and more current resources.

# SAMPLE APPLICATION

## CONTENT:

Mathematics

## GRADES:

Elementary

## STRUCTURAL ANALYSIS/PREFIXES

1. Define prefix as a letter or a group of letters added to the beginning of a word that changes the meaning of a word.

2. Discuss how number prefixes can be used in a variety of ways to help students generalize their meanings:

   - There are prefixes showing quantity or size. For example, the following prefixes are used for numbers 1-10:

     1 - mono, uni
     2 - bi, di, duo, dua
     3 - tri
     4 - quad, quat, quart, tetra, tetr
     5 - quinque, quinqu, quint, penta, pent
     6 - sex, hexa, hex
     7 - sept, hepta, hept
     8 - octa, octo
     9 - novem, non
     10 - dec, deca

3. Have students list words that contain some of these number prefixes. They will need to know the meaning of each word. Have them write short paragraphs using these words.

4. Have students exchange their paragraphs to decipher meanings of the words by analyzing the prefixes and the rest of the words. Also have them check their meanings out with the students who wrote the paragraph.

ADDITIONAL IDEAS:

A list of number prefixes, their meanings and examples appear in *Techniques of Teaching Vocabulary*, by Edgar Dale and Joseph O'Rourke (Field Educational Pub., 1971). Also check with your school librarian for appropriate and more current resources.

## CONTENT:

Literature

## GRADES:

Primary

## MATERIALS:

*Dandelion*, by Don Freeman
Vase or photo of dandelions

## STRUCTURAL ANALYSIS/ETYMOLOGY

1. Show photo or vase of dandelions to familiarize students with the plant.
2. Read *Dandelion.*
3. After discussing the story, write the word dandelion on the board. Underscore lion.
4. Discuss the following:
    - What is this word?
    - Why do you think a word like lion would be part of a flower's name?
5. Write dent on the board. Explain that this is from a French word meaning "tooth" and sometimes, as in dandelion, it is spelled dan.

   Discuss:

    - What do you think the de means?
    - What do you think dandelion means?
    - Why do you think this flower was called dandelion?

ADDITIONAL IDEAS

1. At the K-1 level, the definition of etymology is not necessary. At the upper elementary level, the definition can be given at the end as meaning "the origin and history of a word."
2. At the upper elementary through high school levels, the following activities can be used to introduce or reinforce the concept that many words have meanings originally derived from historical events, myths or foreign languages:
    - Have students research and share the original meanings of their first and/or Hawaiian names.

- Have students do a research project on word origins of other word groups like names of places, days of the week, or months of the year.

- Have students do research on root derivatives from various foreign languages. Introduce students to the etymology key and abbreviations of languages found at the beginnings of most dictionaries.

# CONTEXT CLUES

**WHAT** Context clues are known words or phrases around an unknown word. There are many kinds of contextual clues which help to define unknown words. The more common clues come through formal definitions, examples, descriptions, comparison and contrast, and details rich enough to make inferences from.

**WHY** Learning to use context clues to unlock meanings allows students to flow with the reading of a text without having to stop and use a dictionary each time they encounter an unknown word. The use of context clues helps students to see the relationship between and among words, thus helping them generalize and classify words and concepts.

**WHEN** The use of context clues is best taught when an unknown word appears in the student's text. A review of the most common clues in all subject areas can be taught as "lessons" at the upper elementary through secondary levels. At the primary levels, context and picture clues are best taught as students learn to read.

**HOW** Steps for students:

1. When coming across an unknown word, quickly re-read the sentence to look for some clues to its meaning.
2. If there are no clues in the sentence, read the sentences surrounding that sentence with the unknown word.
3. Use the clues to see if your interpretation of the word makes sense in the way the unknown word is used.

**CONTENT:**

Language arts

**GRADES:**

Elementary

## CONTEXT CLUES

1. Discuss with students how one can figure out the meaning of an unknown word in a sentence by looking for hidden clues found in the surrounding material. Have students identify the clues and give the meaning of each underlined unknown word in the following examples.

   - Sometimes a definition of the unknown word is given in the same sentence:

     > "A chisel, a tool used for cutting and shaping wood, is used by wood carvers."

   - Sometimes a description of the unknown word is given:

     > "She had many speech defects, for example, she lisped and stuttered whenever she spoke in front of her class."

   - Sometimes, a specific clue like the ones discussed above, is not given. But one can infer the meaning of the unknown word by reading all the materials around the word:

     > "Ostriches are found in East Africa. During the breeding season, two to seven females lay their eggs in a communal nest. This nest is said to contain up to 40 ostrich eggs. Only one female ostrich sits on all the eggs."

2. After students have shown understanding of these context clues, have them look for a paragraph with an unknown word or words.

   - Have students copy their paragraphs with the unknown word or words underlined.
   - Have students explain the process used to unlock the meaning of the unknown word or words. What context clues were available and used? What meaning would best fit this unknown word in this particular context?

ADDITIONAL IDEAS

1. Some of the better examples can be shared on chart paper or via an overhead transparency for group review.
2. Whenever students are able to use context clues independently, have them share their efforts with you and join in the excitement of learning.

# VOCABULARY EXPANSION

**WHAT** Vocabulary expansion means increasing one's vocabulary through reading, conversing, listening to radio, watching television programs and films, and participating in classes at school. The use of synonyms and antonyms is a specific way of expanding vocabulary.

**WHY** Students with continuously expanding vocabularies will be better able to communicate their ideas, thoughts, feelings, and experiences in both writing and in speech. In addition to helping students express themselves articulately, a growing command of language also aids them in reading comprehension.

**WHEN** Strategies for vocabulary expansion should be used at all grade levels. They are especially appropriate when encountering new concepts and when revising and editing writing assignments.

**HOW** Steps for students:

1. Look for over-used words and expressions in your own writing or in a reading assignment. Jot down or underline these words.

2. Pick an over-used word and look it up in a thesaurus and/or a dictionary to discover other antonyms and synonyms.

3. If you are doing this with your own composition, check sentences to see whether this editing of words has created the need for new ordering of sentences.

# SAMPLE APPLICATION

## CONTENT:

Physical education

## GRADES:

Upper elementary-secondary

## MATERIALS:

Sports section of a newspaper

## VOCABULARY EXPANSION/SYNONYMS

1. Define synonyms as words or expressions that have the same or nearly the same meaning.

2. Distribute pages from the sports section of a newspaper.

   - Ask students to look for words sports writers use instead of the word win.

   - Write all the words on a chart or on the board.

3. Discuss how sports writers are adept at taking everyday language and applying it in colorful ways to sports.

   Example:

   > The word sting usually is associated with the bite of an insect. In a sports headline, it means win. Hammer calls to mind a carpenter's tool, but a sports writer can use it as a synonym for win.

4. Have students analyze some of the words written on the chart or board. What would these words ordinarily mean in another situation? How has the sports writer adapted them to sports?

5. Using the following headings, have students write each of the verbs for win, the score and the degree of victory suggested by the word:

| WORD | SPORT | SCORE | WHAT TERM IMPLIES |
|---|---|---|---|
| hammers | football | 48-7 | Big victory - 6 touchdowns |
| nips | basketball | 114-113 | Just got by - a close one |
| embarrasses | football | 35-0 | Overpowering - didn't let the opponent score |

### ADDITIONAL IDEAS

1. As an extension to the above activity, suggest to students that they "cover" an actual game in person or watch it on television and do the following:
    - Write an article or a broadcast story covering the game. Add the results plus some special game plays. Be aware of the verbs used. Use dynamic, colorful words to catch the reader's eyes or listener's ears.
    - Role play as newscasters on television and present coverage to class.
2. A good resource for synonyms is *Webster's New Dictionary of Synonyms* (Merriam-Webster Inc., 1984). Also check with your school librarian for other suitable resources.

# SAMPLE APPLICATION

**CONTENT:**

Language arts

**GRADES:**

Elementary

## VOCABULARY EXPANSION/ANTONYMS

1. Define antonyms as words having opposite meanings, such as hot - cold, large - small.
2. They can be formed by adding certain suffixes and prefixes.

   Examples: indoor - outdoor (adding prefixes)
   bearded - beardless (adding suffixes)

3. Have students put their findings on a chart. Group them by similar prefixes and suffixes. Discuss their meanings.
4. Use the chart as a growing source of vocabulary for future references.

ADDITIONAL IDEAS

1. Crossword puzzles and bingo games are excellent ways of using synonyms and antonyms.
2. Students can rewrite a children's story like *The Three Bears.* They can change all the verbs and adjectives in the story. The sentence structure may also need to be changed. The story can be illustrated and shared with younger children.
3. At the upper level, the concept of negativism in language with the use of certain conjunctions such as but, yet, or however can be introduced:

   Example: He was a courageous soldier in battle but a timid suitor when it came to dating.

# CONCEPT ATTAINMENT

**WHAT** Concept attainment is the tactic of associating experiences with a word commonly used to represent these experiences (Marzano and Arredondo, 1986).

**WHY** Students encounter a vast number of new concepts every year in every course. This strategy provides students with a tool with which they can be independent learners of new concepts.

**WHEN** This strategy is best used when students are introduced to basic vocabulary within instruction or when students are introduced to new vocabulary/concepts in content-area classes from primary through secondary grades.

**HOW** Steps for students:

1. Describe the new concept/word in terms of your own experiences after your teacher has introduced it.
2. Form a strong mental image of the new concept/word; include the physical sensations and emotions you associate with it.
3. Say the word in your mind's ear or say it aloud so you can hear how it sounds.
4. See the word in your mind's eye so you can visualize how it is spelled.
5. Systematically review the new concept/word, adding and deleting information, as you learn more about it.

## CONTENT:

Language arts

## GRADES:

Primary

## CONCEPT ATTAINMENT

1. Introduce the word dog by describing it and providing some personal examples of your experiences with dogs.
2. Have students describe the new word in terms of their own experiences. Record their responses on chart paper/blackboard.
3. Help students form a strong mental image of the new word by discussing:
    - What does a dog look like?
    - When you touch it what does it feel like?
    - What kinds of sounds does it make?
    - How do you feel about dogs?
4. Have students say the word dog to themselves or say it aloud. Tell them it is important to hear how it sounds.
5. Have students visualize how the word looks in print; spell it. Have students trace the word in the air if it helps.
6. Provide review opportunities by referring to the word in other lessons/activities. Encourage expansion and refinement of students' understanding of dogs as the semester progresses.

ADDITIONAL IDEAS

Have students in upper elementary grades and beyond keep notebooks of key concepts learned. For each concept, have them record the following information:

- their description of the concept
- the mental picture they associate with the concept (students may do this in a word picture or they may draw or symbolize it)
- the physical sensations they have about the concept
- their emotions about the concept.

Periodically have students go back and revise the information in their notebooks as their knowledge of the concept increases (Marzano and Arredondo 1986).

# REFERENCES

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# *MEDIA UTILIZATION SKILLS*

**Before media use**

- Attention control H-5

**During media use**

- Questioning H-6
- Macro-pattern recognition H-7
- Pictures H-12
- Graphs/charts H-15
- Maps H-22
- Films/television H-29

**After media use**

- Learning log H-33

# BACKGROUND

Audiovisual means of communication, or media, are so much a part of our daily lives that we often forget how powerful their influence can be on what we think and feel and how we act.

Skills in viewing media are extremely important for students. Unfortunately, these skills have also been among the most neglected areas of study improvement.This chapter is based on several key understandings about media and students:

- Every medium tells a story in its own way depending on its distinctive makeup of sound, pictures, and print (Salomon 1979).
- Each medium calls on students to do slightly different types of mental work. For example, picture stories call for facility with drawings and photographs; while television asks students to integrate sound and picture information (Brown 1986).

Selection of media themselves should be based on some of the following considerations:

- Is the content useful and important to the learner?
- Will it be interesting to students?
- Is there direct relationship to a specific objective or problem solving activity?
- Have facts and concepts been checked for accuracy?
- If controversial, are all sides given adequate emphasis?
- Is bias of propaganda evident? If so, how should students deal with it?
- Is technical quality satisfactory? (Erickson 1972).

In addition, physical facilities and conditions for using media should be arranged in a manner that provides for economy of time and optimum learner attention and participation.

In this section, several strategies are presented to help students become more critical users of media.

The chapter highlights several of the media more commonly used in schools, including pictures, graphs, maps, television and films. Students can use many of the same strategies mentioned in this section in viewing/listening to other media such as filmstrips and slide productions.

# BEFORE MEDIA USE: ATTENTION CONTROL

The same strategy is defined as a pre-reading activity in the chapter on reading skills (p. F-4). Please refer to that section for explanations and a sample application.

# DURING MEDIA USE: QUESTIONING

The same strategy is defined as a pre-reading activity in the chapter on reading skills (p. F-18). Please refer to that section for explanations and a sample application.

# DURING MEDIA USE: MACRO-PATTERN RECOGNITION

**WHAT** A macro-pattern is a recognizable plan on which a text or presentation has been organized. Macro-patterns are tools to focus what is being viewed or read into large, meaningful blocks of information (Marzano and Arredondo 1986).

**WHY** By using macro-patterns students can more easily do the following:

- identify concepts and main ideas
- relate ideas
- develop concepts
- retain and recall large amounts of information.

**WHEN** Learning to use macro-patterns is critical to the viewing process. It not only facilitates learning of the content, but it allows students to acquire and retrieve information much more efficiently. This strategy is more appropriate for students in the upper elementary grades and beyond.

**HOW** Steps for students:

1. Watch a program on film, filmstrip, or television. Fit one of the patterns to the program.

2. Organize the information using one of the following patterns:
   - Narrative
   - T-R-I
   - Definition
   - Problem-solution
   - Argumentation

   (Fuller explanations of each are on following pages.)

- Narrative macro-pattern. The narrative or story macro-pattern commonly contains the following elements:

  A. Characters: the characteristics of the main characters in the story.

  B. Setting: the time, place and context in which the information took place.

  C. Initiating event: the event that starts the action rolling in the story.

  D. Internal response: how the main characters react emotionally to the initiating event.

  E. Goal: what the main characters decide to do as a reaction to the initiating event - the goal they set.

  F. Consequence: how the main characters try to accomplilsh the goal.

  G. Resolution: how the goal turns out.

- T-R-I macro-pattern. T-R-I stands for topic, restriction and illustration. This macro-pattern is commonly found in expository material. The topic (T) is a very general statement about the information to be discussed. The restriction (R) limits the information in some way. The illustrations (I) exemplify the restrictions.

- Definition macro-pattern. Definition macro-patterns contain the folllowing elements:

  A. Term: the subject to be defined (e.g., car).

  B. Set: the general category to which the term belongs (e.g., vehicles for transportation).

  C. Gross characteristics: those characteristics that separate the term from other elements in the set (e.g., runs on the ground, has four wheels).

  D. Minute differences: those different classes of objects that fall directly beneath the term (e.g., sedans, convertibles).

- Problem-solution macro-pattern. Problem-solution macro-patterns introduce a problem and then identify one or more solutions to the problem.

- Argumentation macro-pattern. Argumentation macro-patterns attempt to support a claim. They contain the following elements:

  A. Evidence: information that leads to a claim (e.g., "Last night the streets were filled with violence").

  B. Claim: the assertion that something is true (e.g., "Our city is becoming a haven for crime").

  C. Support: examples of or explanation for the claim (e.g., "It infests our judicial system").

  D. Qualifier: restriction on the claim or evidence counter to the claim (e.g., "However, there is a ray of hope").
  (Marzano and Arredondo 1986).

# SAMPLE APPLICATION

## CONTENT:

Literature

## GRADES:

Secondary

## MATERIALS:

Videotape, "Electric Grandmother," 32 min. Learning Corporation of America, 1981

## MACRO-PATTERN RECOGNITION

1. Introduce the macro-pattern most appropriate for this initial viewing activity: narrative macro-pattern. Describe this macro-pattern on a handout that can also be used for taking notes.

   (Note: For most students, introducing more than one macro-pattern at a time may be overwhelming. As they comprehend and match a macro-pattern to a program, they increase their readiness to explore other macro-patterns.)

2. View "Electric Grandmother" based on the short story by Ray Bradbury.

3. Have students take notes using the handout while they view the program.

4. After the viewing, have students discuss in small clusters or as a class, their responses to the key elements. Responses may look something like this:

   - Characters - Tom, eldest child and story's narrator;
     Agatha, middle child who fights acceptance of the robot grandmother;
     Timothy, youngest child who instantly loves the robot;
     Electric Grandmother, a combination of all the loving, wise traits the children want in a grandmother.

   - Setting - suburb or small city in U.S.; modern day.

   - Initiating event - mother's death leaves a void when Fantoccini Co. which manufacures special robots sends the family a mysterious invitation.

   - Internal response - children's great curiosity leads them to force their dad to accompany them to the factory.

   - Goal - desperate for a mother "substitute," the famly orders a tailor-made grandmother.

- Consequence - they all love Grandmother almost instantly except for Agatha who is afraid that Grandmother will leave them like their mother did.

- Resolution - when Grandmother saves Agatha from an oncoming car - and survives the accident herself - Agatha finally realizes that this grandmother will truly live forever.

ADDITIONAL IDEAS:

1. Present other macro-patterns as they are appropriate. Repeat the steps.

2. At the point that students are comfortable with two or more macro-patterns, have them identify the patterns as they appear in viewed presentations.

3. Macro-patterns may also be simplified for use with elementary grades. For example, the narrative macro-pattern can be reworded as follows:

    - Who is in the story? (Characters)

    - Where does the story take place? (Setting)

    - What important thing happened first? (Initiating action)

    - What else happened? (Consequence)

    - How did the character(s) solve the problem - or how did the story end? (Resolution)

4. Also refer to pattern recognition strategies in the chapters on reading, note-taking, and research skills.

# DURING MEDIA USE: PICTURES

**WHAT** Still pictures include a range of instructional materials from study prints and posters to illustrations in books. Simply looking at a picture doesn't mean learning from it. Certain kinds of mental activity and active learner responses are basic to the observation process. The steps should include the naming of objects (differentiation) which leads to the putting together of ideas (synthesis) which leads in turn to further differentiation and synthesis (Erickson 1972).

**WHY** Active contact with pictures helps students develop their skills in perception, observation, recall, comparison, judgment, inference, and conclusion.

**WHEN** Skills in observing still pictures can be gradually built from the earliest grade levels since students are exposed to this visual form from their first years in school.

**HOW** Steps for students:

1. Create a title or a statement of the main idea of the picture.
2. Note the details of the picture.
3. Observe the expressions on people's faces and guess how people portrayed in the picture feel.
4. Ask yourself what happened just before or what led up to this scene.
5. Consider the course of events or the effects which might result from this event pictured.
6. Make a judgment as to the accuracy of the event portrayed.

# SAMPLE APPLICATION

## CONTENT:

Language arts

## GRADES:

Primary

## MATERIALS:

*Keaka and the Lilikoi Vine*, by Donivee Laird (Barnaby Books, 1982)

## PICTURES

1. Introduce the picture book by telling students that it is a special kind of book in which both the words and the pictures work together to tell a story.
2. Read aloud the story, *Keaka and the Lilikoi Vine.*
3. Stop at appropriate pictures to discuss how they help to tell the story.

   (Note: It is important that you do this selectively so as to maintain the flow of the story and to sustain student interest.)
4. Ask key questions. The following are samples relating to one of the illustrations in the book.
   - Who is in the picture and what is he going? (Main idea)
   - How would you describe him? (Details)
   - How do you think he is feeling? (Inference)
   - Can you see anything else in the picture? (Details)
   - Can you remember what happened before this scene? (Recall)
   - What do you think will happen next? (Cause and effect)

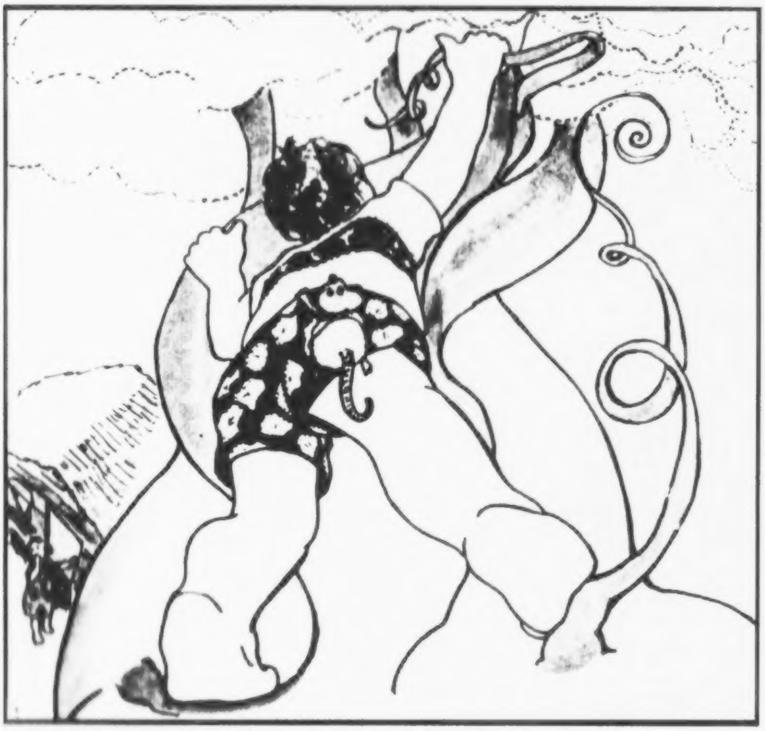


Illustration © 1982 Barnaby Books. Used by permission.

ADDITIONAL IDEAS

1. Provide additional practice with other picture books. This does require that you plan in advance and select only certain pictures to be used for guided observation.

2. Extend these observational skills to work with study prints, posters, photo essays, etc.

3. Encourage students to draw or to create their own art and to critique the pieces using some of the same types of questions.

4. Students need to know that they don't have to be artists to learn from pictures. A few other ways of using pictures are:

    - Have students begin to illustrate their notes whenever possible. Tell them not to worry about artistic quality- just be sure that they understand what their illustrations mean.

    - Have students practice seeing pictures in their mind's eye. The more they practice, the more clearly they will learn to visualize (*HM College Study Skills Program* 1982).

# DURING MEDIA USE: GRAPHS/CHARTS

**WHAT** Graphs and charts are important ways of visually communicating complex, statistical information (Stein 1983). Understanding charts and graphs involves knowing how they work in dividing information into categories and in symbolizing amounts so that trends are apparent.

**WHY** Graphs and charts are a critical part of everyday life. They help students to:

- gain information quickly
- grasp relationships from new perspectives
- critically analyze statistical proof.

**WHEN** Being able to read graphs and charts is especially important in science, social studies and mathematics; however, the use of graphs and charts is not limited to these areas. Their use should be taught wherever this skill is needed. Simple forms of graphs and charts may be introduced even in the primary grades.

**HOW** Steps for students:

1. Identify the general topic presented.
2. Identify the key categories of information presented.
3. Make several generalizations based on the information.
4. Check the source of information if it is given.
5. Decide whether the source has biases or special motives.
6. Decide whether the statistics make sense in light of what you know about the topic.

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Junior high

## MATERIALS:

Graph of crimes in U.S.

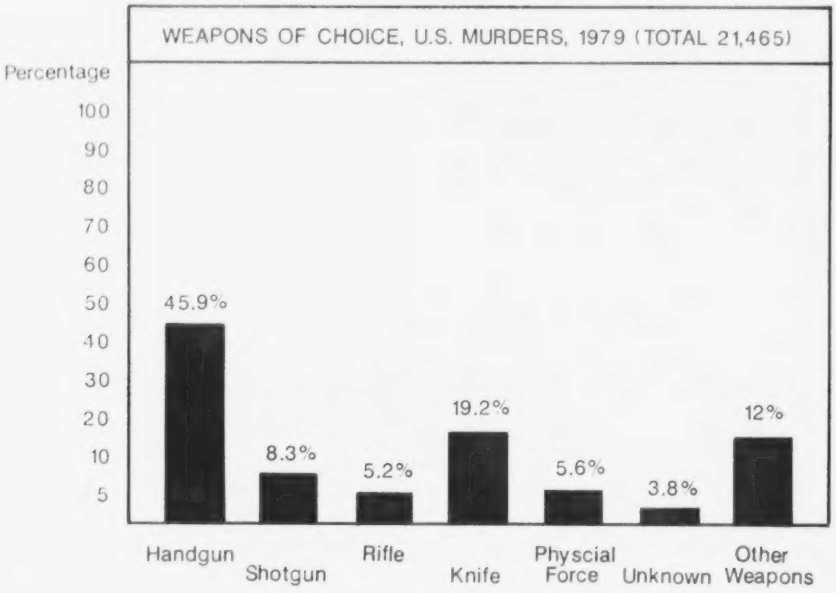
## GRAPHS/CHARTS

1. Introduce the concept of charts and graphs by defining each and having examples posted around the room or on a bulletin board.

   Sample definitions

   - Graph: a diagram that shows how one variable quantity changes in relation to another variable quantity.
   - Chart: a visual that gives information in a tabular form of horizontal rows and vertical columns.

2. As part of a unit on crimes in the U.S., reproduce the graph below on an overhead transparency:



3. As a class, discuss the following:

   - What is the general topic of this graph?
   - What categories of information regarding U.S. murders in 1979 does it provide?

- How were the largest number of murders committed?
- How were the fewest number of murders committed?
- What is the source of this information?
- Is this source a reliable one?
- Based on our earlier readings, is this information accurate?

ADDITIONAL IDEAS

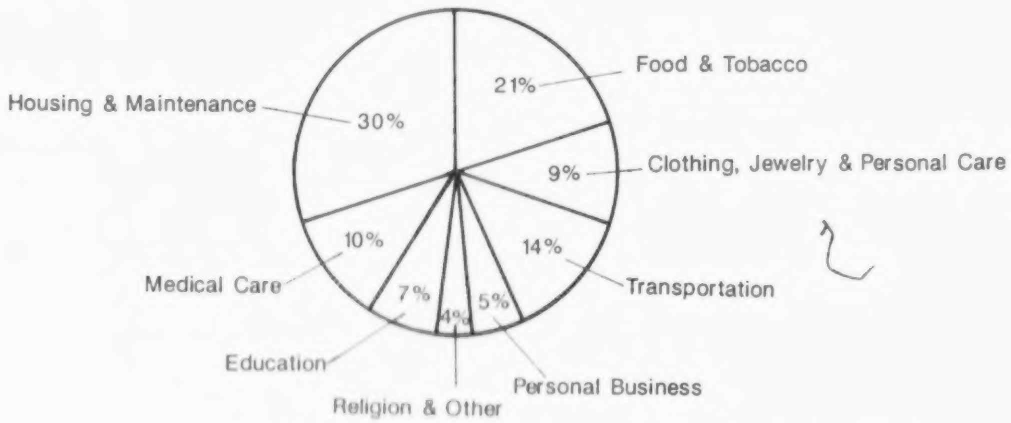
1. Provide additional practice with other types of charts and graphs as they are appropriate.
2. Have students in the upper grades create their own charts and graphs as part of written and oral presentations. See the following pages for different types of charts and graphs.
3. Have students in the primary grades work with simple graphs such as pictorial graph (see p. H-19 for an example).

## TYPES OF GRAPHS AND CHARTS

Note: The following examples of graphs and charts are representative of the range. They do not exhaust all possibilities; however, they do provide a good beginning in seeing the many types.

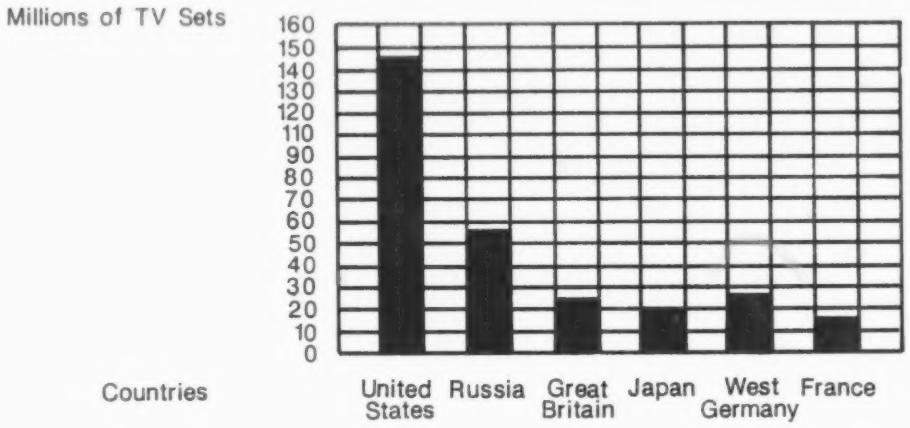
1. CIRCLE/PIE GRAPH: used to show how a whole is divided into parts, usually on the basis of percentage.

HOW FAMILY MONEY IS SPENT IN THE UNITED STATES

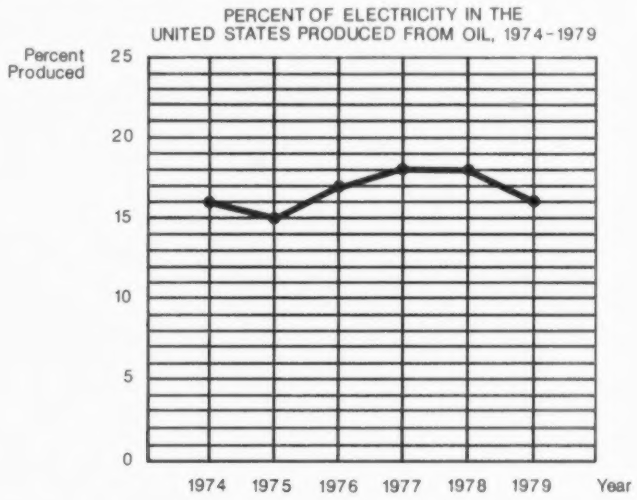


2. BAR GRAPH: used for comparisons and arranged vertically or horizontally.

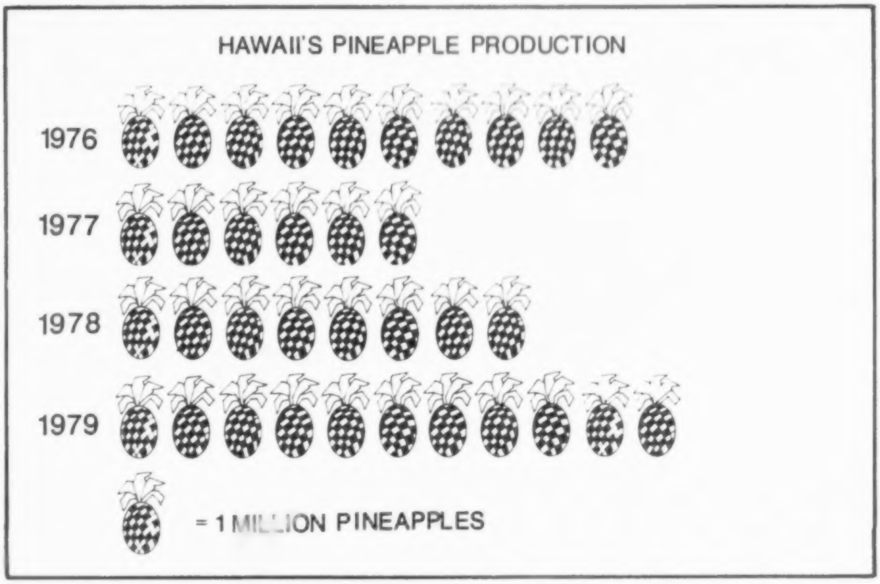
NUMBER OF TV SETS, BY COUNTRY



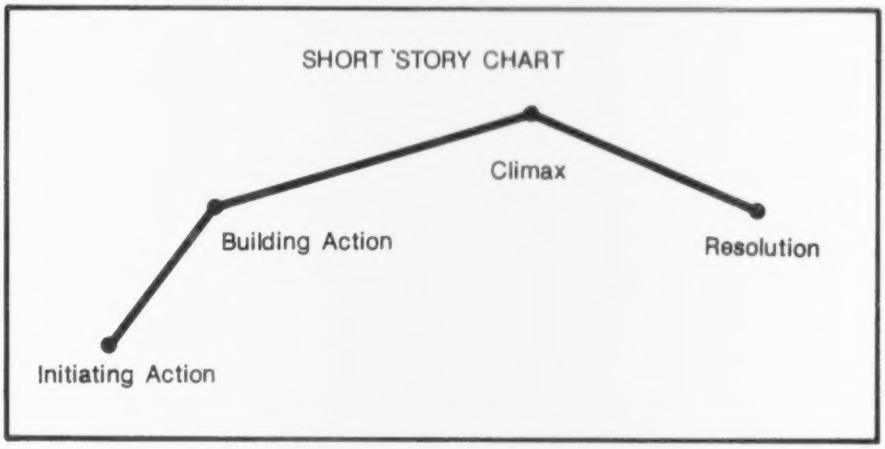
3. LINE GRAPH: used frequently in plotting trends.



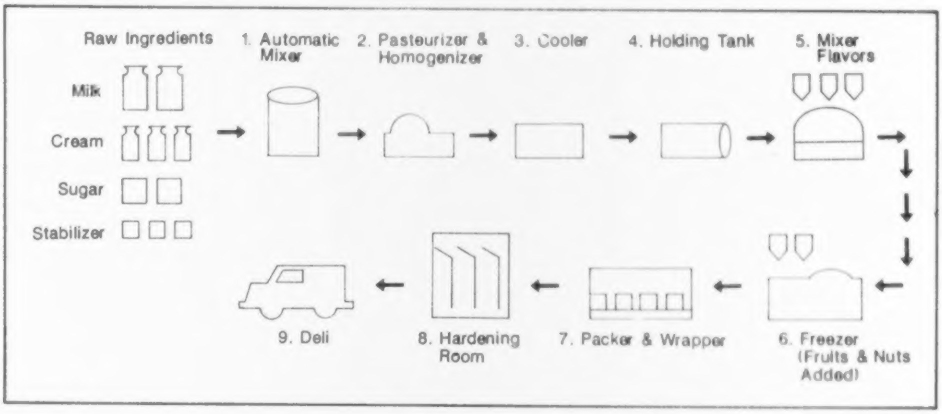
4. PICTORIAL GRAPH: substitutes picture-like figures for bars, lines shaded areas. They are usually not as exact as other graph types because there is a certain amount of estimation on quantity.



5. EXPERIENCE CHART: used to visually record stories, news, or experiences.


SHORT 'STORY CHART
Climax
Building Action
Resolution
Initiating Action

6. FLOW CHART: used to show sequence and relationships.


Raw Ingredients
Milk
Cream
Sugar
Stabilizer
1. Automatic Mixer
2. Pasteurizer & Homogenizer
3. Cooler
4. Holding Tank
5. Mixer Flavors
6. Freezer (Fruits & Nuts Added)
7. Packer & Wrapper
8. Hardening Room
9. Deli

7. TIME CHART/TIME LINE: used to show relationships of historical events, chronology, growth changes.

## FRANKLIN DELANO ROOSEVELT'S LIFETIME

| | |
|---|---|
| 1887 | INTERSTATE COMMERCE ACT |
| 1903 | WRIGHT BROTHERS FLY |
| 1904 | F.D.R. GRADUATES FROM HARVARD |
| 1914 | PANAMA CANAL OPENS |
| 1917 | U.S. ENTERS W.W. I |
| 1921 | F.D.R. HAS POLIO |
| 1927 | LINDBERGH FLIES ATLANTIC |

8. TABULAR CHART: used to depict information that can be set up in a table format with rows and columns.

| TABLE OF FOOD VALUE | | |
|---|---|---|
| FOOD | AMOUNT | TOTAL CALORIES |
| WHOLE MILK | 8 OZ. | 150 |
| COLA | 12 OZ. | 145 |
| HAMBURGER ROLL | 1 | 120 |
| HAMBURGER PATTY | 3 OZ. | 185 |
| FRANKFURTER | 1 | 170 |
| CARROT, RAW | 1 | 30 |
| APPLE, RAW | 1 | 80 |
| BANANA, RAW | 1 | 100 |

# DURING MEDIA USE: MAPS

**WHAT** Map-reading skills involve learning how to locate oneself in relation to a certain place or to find various places and their relation to each other. The core of map-reading is to understand certain features of maps. These features range from direction to pictorial symbols (Carey 1983).

**WHY** Students need these skills because maps:

- provide valuable information about areas, distances, directions, shapes, sizes and relationships.
- stimulate interest in people and places.
- have timely importance in a constantly shifting global society (Kinder 1965).

**WHEN** Map-reading skills require some place-orientation ability. For this reason the first real systematic instruction probably comes in the middle or upper elementary grades; however, pre-map reading skills can be introduced at the primary levels. Maps are also best used in correlation with other instructional media such as field trips, films, filmstrips, and printed materials.

**HOW** Steps for students:

Locate the following (if applicable) on the map:

1. direction
2. latitude and longitude
3. scale
4. pictorial symbols and what they represent
5. lines and what they represent
6. colors and what they represent

# SAMPLE APPLICATION

## CONTENT:

Geography

## GRADES:

Upper elementary

## MATERIALS:

Map of Washington, D.C.

## MAPS

1. Introduce the concept of maps and the general types of maps. Display examples.

   Sample definitions

   - Concept: Maps are flat pictures that combine symbols, words and drawings and employ lines to indicate what the earth, or part of the earth, looks like.
   - General types:
     - General reference maps show how cities and roads are built around natural features like mountains, lakes and rivers.
     - Special-purpose maps can range from maps of bike paths to history maps.

2. As part of a unit on major cities in the U.S. reproduce the map of Washington, D.C. on an overhead transparency (see p. H-25).

3. Prepare a handout, explain map terminology and conventions and go over each of the items very briefly (sample on pp. H-26 to H-28).

4. Ask questions that require application of map-reading skills using the handout and the overhead transparency.

   Sample questions

   - Which building is closest to the west end of the map?
   - Can you locate the scale on the map? Each inch on this scale is equal to about how many feet?
   - The Capitol Building is about how many feet long from north to south?
   - Can you locate the legend on the map? How many tourmobile stops are there?

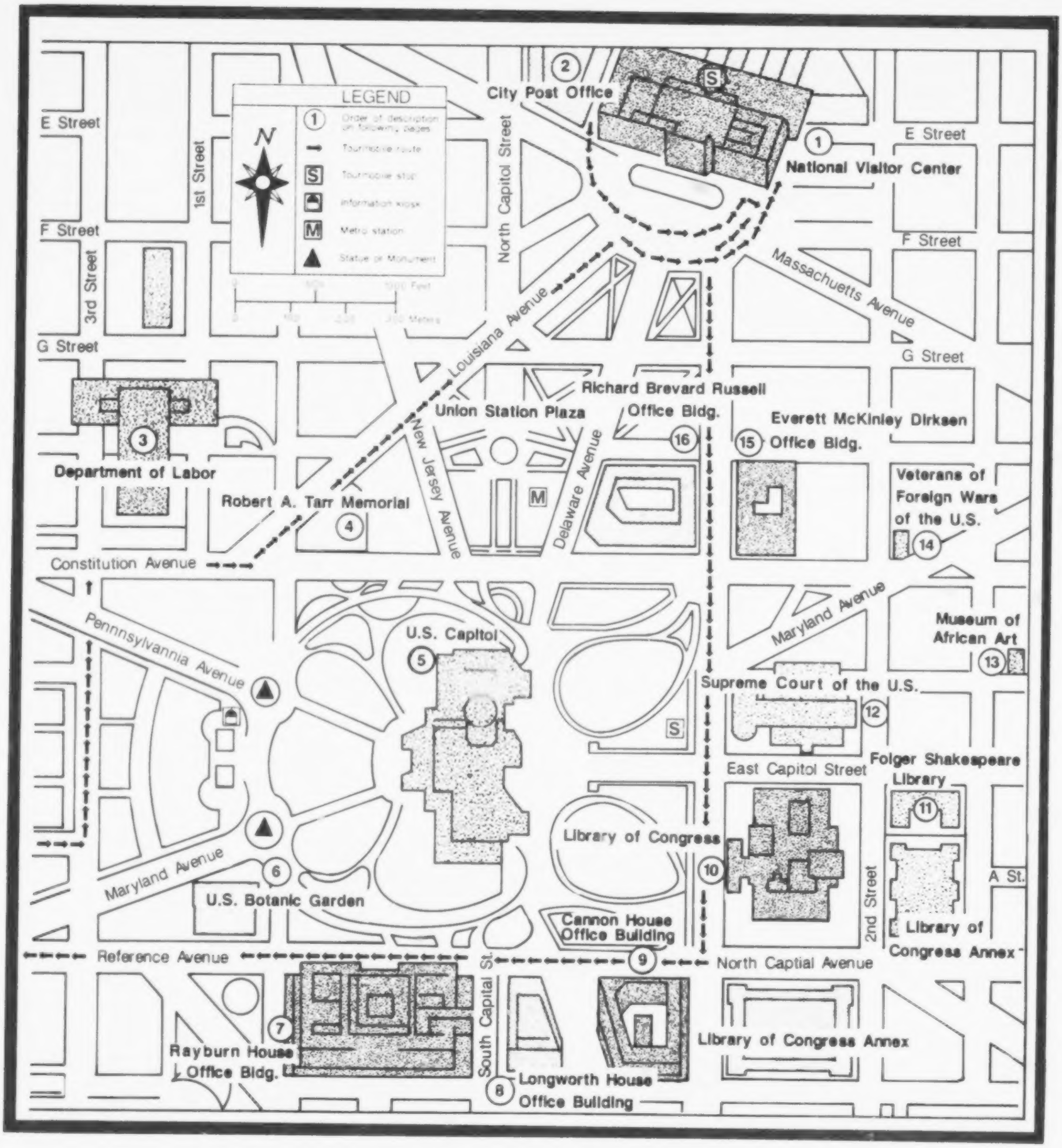
ADDITIONAL IDEAS

1. Provide additional practice with other types of maps as they are appropriate.

2. Pre-map reading skills can be taught to lower elementary students. Teachers can introduce map ideas by beginning with the immediate environment. A drawn outline of the classroom, indicating doors, windows and furniture is a good starting place. Floor maps on which children can place models of homes, schools, etc., help place orientation. Field trips and place understanding also go hand-in-hand (Kinder 1965).

3. Have students create their own street maps.

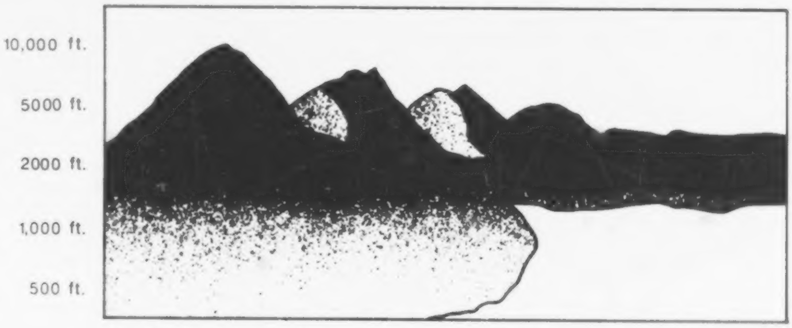
STREET MAP: WASHINGTON D.C.


LEGEND
N
① Order of description on following pages
Tourmobile route
S Tourmobile stop
Information kiosk
M Metro station
Statue or Monument
0 500 1000 Feet
0 100 200 300 Meters
E Street
F Street
G Street
1st Street
3rd Street
North Capitol Street
② City Post Office
① National Visitor Center
Massachusetts Avenue
Louisiana Avenue
③ Department of Labor
Union Station Plaza
Richard Brevard Russell Office Bldg. ⑯
Everett McKinley Dirksen ⑮ Office Bldg.
New Jersey Avenue
Delaware Avenue
Robert A. Tarr Memorial ④
Veterans of Foreign Wars of the U.S. ⑭
Constitution Avenue
Pennnsylvania Avenue
U.S. Capitol ⑤
Maryland Avenue
Museum of African Art ⑬
Supreme Court of the U.S. ⑫
East Capitol Street
Folger Shakespeare Library ⑪
Library of Congress ⑩
A St.
2nd Street
Library of Congress Annex
Maryland Avenue ⑥
U.S. Botanic Garden
Cannon House Office Building
Reference Avenue
⑨ North Captial Avenue
South Capital St.
⑦ Rayburn House Office Bldg.
⑧ Longworth House Office Building
Library of Congress Annex

# PARTS OF A MAP

1. Color: Color and shading, along with special symbols can be used to show the type of land in the area and how that land is used. A key or legend explain their use.

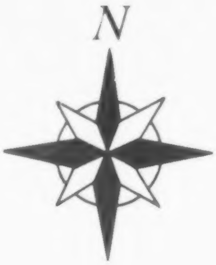
Example:


10,000 ft.
5000 ft.
2000 ft.
1,000 ft.
500 ft.

Shading from green through yellow, brown and red indicates increase in altitude. Figures show approximate altitude in feet for corresponding color.

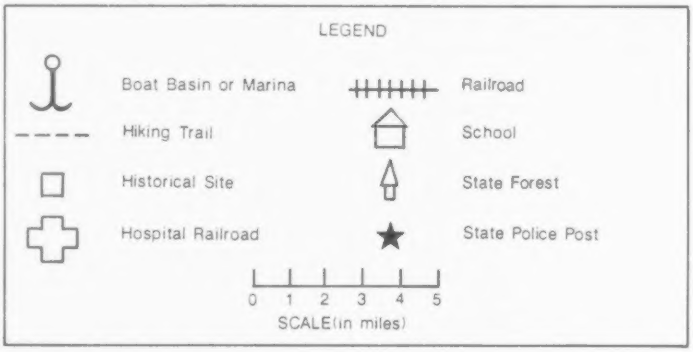
2. Direction: Most maps use special signs or symbols to show which direction is north.

Example:



3. Legend or key: Mapmakers use special marks and symbols to show information on maps. These special marks and symbols are usually explained in a box printed on the map called a legend or key.

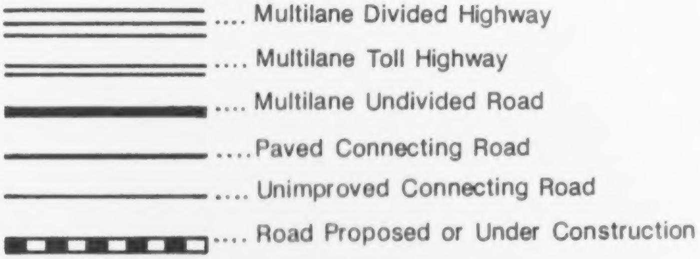
Example:


LEGEND
Boat Basin or Marina
Railroad
Hiking Trail
School
Historical Site
State Forest
Hospital Railroad
State Police Post
0 1 2 3 4 5
SCALE(in miles)

PARTS OF A MAP (cont.)

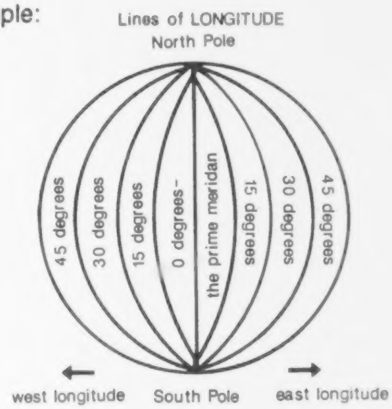
4. Lines: mapmakers use special lines on maps to show roads. The kind of line used shows the type of road.

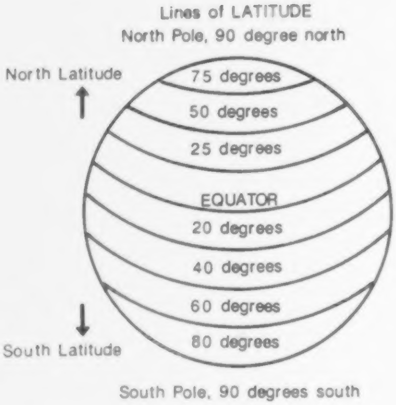
Example:


.... Multilane Divided Highway
.... Multilane Toll Highway
.... Multilane Undivided Road
....Paved Connecting Road
.... Unimproved Connecting Road
.... Road Proposed or Under Construction

5. Longitude and latitude: These are imaginary lines that mapmakers use to help locate points on the earth. The imaginary lines that run from the North Pole to the South Pole are called lines of longitude. The lines that run east and west around the earth are called lines of latitude.

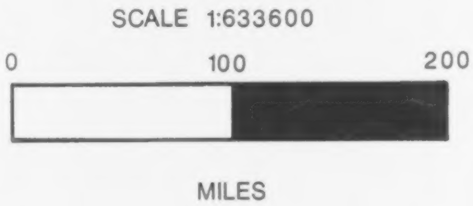
Example:


Lines of LONGITUDE
North Pole
45 degrees
30 degrees
15 degrees
0 degrees-
the prime meridian
15 degrees
30 degrees
45 degrees
west longitude
South Pole
east longitude


Lines of LATITUDE
North Pole, 90 degree north
North Latitude
75 degrees
50 degrees
25 degrees
EQUATOR
20 degrees
40 degrees
60 degrees
80 degrees
South Latitude
South Pole, 90 degrees south

6. Scale: A map is usually much smaller than the thing or area that is pictured. To show how far it really is between places, mapmakers use a scale.

Example:


SCALE 1:633600
0
100
200
MILES

A scale includes a series of marked intervals, a ratio of the map's size relation to the real thing, and the units of measurement, usually expressed in feet, meters, miles or kilometers.

(Adapted from *The World Almanac Stuay Skills Program.* New York: Newspaper Enterprise Association, 1982.)

# DURING MEDIA USE: FILMS/TELEVISION

**WHAT** The use of moving images for learning starts with the understanding that viewing television or films for school assignments requires a more purposeful use of time than watching for entertainment and relaxation. The kind of viewing tools a student needs depends upon the type of show and the nature of the assignment (Stein 1983).

**WHY** Students often begin to watch television and films before they learn to speak, read or write. For the most part, it is a passive, voluntary activity. Developing strategies for viewing these electronic media will help students retrieve information more purposefully and develop critical thinking skills in reaching conclusions and making judgments.

**WHEN** These particular strategies for viewing different types of programs are best introduced at the upper elementary levels and beyond. For primary grade students, the questioning strategy discussed earlier in this chapter is more appropriate.

**HOW** Steps for students:

1. Before watching a program, decide why you are watching it and exactly what you hope to achieve from it.
2. Consider how you are being asked to use the information.
3. Since moving images deliver a constant flow of new information to your eyes and ears, create a chart or log that will help you remember what you have seen and heard.
4. Be prepared to watch the show actively, looking for the information you will need to fill in your chart or log.

# SAMPLE APPLICATION

## CONTENT:

Health

## GRADES:

Secondary

## MATERIALS:

Videotape, "Crack,"
29 min. Film for
Humanities and Sciences,
Inc., 1986.

## FILMS/TELEVISION

1. Introduce the program to be viewed by formulating with students the objectives for watching it. List these on the board.

   Example: To find out more about the crack problem in the U.S. - what it is, why it exists, how we can deal with it.

2. In line with objective, explain the specific assignment to be made based on the viewing.

   Example: Based on the viewing and related readings, each students will design and create a pamphlet on crack to be displayed in the school library.

3. Discuss kinds of information that the program should provide.

   Examples:

   - What is crack
   - How it differs from other drugs
   - Why people use it
   - How widespread it is
   - How to detect users
   - How to help users
   - How to help prevent use.

4. As a problem solving activity, devise a form that will make taking notes easier based on the kinds of information needed.

   Example:

   PROBLEM:

   CAUSES:

   EFFECTS:

   RESOLVING THE PROBLEM

   How:

   Who:

5. Test out the form by having students use it during the viewing of "Crack."

6. After the viewing, discuss the information students were able to extract.

7. Also critique the strengths and weaknesses of the form. Have students suggest ways to improve it.

ADDITIONAL IDEAS

1. Provide additional practice with creating visual charts or logs for other viewing activities.

2. This strategy is useful for not only films and television, but for filmstrips and slide presentations as well. It can be used with elementary grades if it is modeled by the teacher as part of a directed class activity.

3. Viewing needs to be seen as a lively, interactive process. Make time to have students discuss what they have watched. The charts and logs can be very useful in this discussion.

   Example: After viewing a short program, divide students into groups of four to six. Using their notes, assign all groups to come up with a statement of the main idea with each person required to make a contribution. As a class, hear the statements from the group reporters and try to reach consensus on one or two composite statements.

4. This viewing strategy correlates with macro-pattern recognition mentioned earlier in this chapter and can probably work well in some integrated fashion with it.

# AFTER MEDIA USE: LEARNING LOG

The same strategy is defined as a post-reading activity in the chapter on reading skills (p. F-35). Please refer to that section for explanations and a sample application.

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# *NOTE-TAKING/ OUTLINING SKILLS*

**Before taking notes**

- Determining note-worthiness I-4
- Key words I-7
- Shortcuts I-10

**Taking notes/outlining**

- Mapping I-14
- Clustering I-18
- Formal outlining I-21
- Pattern recognition I-24
- Memory clue system I-33

**After taking notes**

- Tips I-38

# BACKGROUND

Note-taking is usually thought of as simply the gathering, recording, and outlining of information. But notes are a means, not an end; their most valuable function is to help us discover meaning and relationships in what we read, hear and see. To do this requires that note-takers be thinking about what they read, hear or see even before they write, while they write, and after they write.

This section is organized into three parts:

- before taking notes
- taking notes/outlining
- after taking notes

Each of these parts encourage exploration of ways in which note-taking can be more meaningful as well as more efficient. Students can benefit from the opportunities to use notes to their advantage, from experimenting with a variety of note-taking forms, and from making decisions about the appropriate strategies or forms to use for a variety of situations.

# BEFORE TAKING NOTES: DETERMINING NOTE-WORTHINESS

**WHAT** Determining note-worthiness is the act of identifying key ideas. Students often don't discriminate between what is significant information and what is not noteworthy. They end up trying to write every word they hear or read. In the process of doing that, the important ideas drown in a sea of words.

**WHY** Determining note-worthiness enables students to devote more attention to understanding the key ideas. By doing this, they can better understand the relationship of the supporting ideas and details and appreciate the relationship of the key ideas to each other. Thus, the student is using time more efficiently while increasing the impact of the learning.

**WHEN** Determining note-worthiness is a prerequisite to note-taking and may be introduced as early as the primary grades.

**HOW** Steps for students:

1. Preview the material. Some of the considerations to keep in mind are:

    - the complexity of the materials
    - how the information will be used
    - the intent of the informant or source
    - personal interests or considerations.

2. Determine what kind of information is needed, its relevance, its importance, and its significance to you.

3. Make note of the information that meets the criteria you have established.

## CONTENT:

Social studies

## GRADES:

Secondary

## DETERMINING NOTE-WORTHINESS

1. In order to help students recognize the difference between generalities and specifics and between important and unimportant information, have them look for main ideas and practice identifying important ideas .with assignments based on information from the content being studied. Have students carry on activities such as:

   - identify the major cause(s) of World War II
   - identify the main ideas or topic sentences in the textbook chapter on WWII.
   - identify common characteristics of the Allied Forces.

2. Introduce note-worthiness by having students complete tasks such as the following:

   - List important information from a news article on the bombing of Pearl Harbor.
   - Compare the statements that they considered important and discuss the reasons for their choices.
   - Compare their choice with the reporter's (as demonstrated by placement in the opening paragraphs of the article) and discuss the reporter's reasons.
   - Discuss the way in which the main idea of the article can change as different ideas or facts are emphasized.

3. Provide practice with print and nonprint media by having the students do the following:

   - Take notes from other information read or heard in class, keeping in mind an assignment that is to be completed with the use of the notes. As a class, compare and discuss similarities and differences in what was selected as important information.

- Identify the kind of information that would be needed to complete a particular assignment such as a time line of the events leading to the bombing of Hiroshima. Compare that with the kind of information that would be needed to complete a different assignment such as a personal position paper on the bombing of Hiroshima.

ADDITIONAL IDEAS

1. Primary and upper elementary grades practice identifying the main idea as they discuss reading selections or as they write in their learning logs about significant incidents in the reading selections.

2. As students practice justifying their choices and reasons for what they do or say they are making decisions about what is significant to them or to the solution of a problem.

# BEFORE TAKING NOTES: KEY WORDS*

**WHAT** Key words are a technique that help students take notes in their own words. This requires students to think about what they hear or read so that they may understand concepts.

**WHY** Notes taken in the student's own words are more meaningful when reviewed later because in going through the process of thinking about the ideas and giving them words, the student has established a personal link with that knowledge. Having thought so much about the information also facilitates recall.

**WHEN** Any technique such as key words which enables students to state information in their own words should be taught very early in their school years.

**HOW** Steps for students:

When reading -

1. Preview the material, keeping in mind the purpose or objective for reading the material.
2. Jot down key words and phrases.
3. Without referring back to the textual material, make statements about the most important ideas based on the key words you listed.
4. Add more statements or phrases providing supporting information and details to form clusters with the key statements to which they are directly related.

* A related strategy on key word searching is included in the chapter on research skills (p. J-12).

5. Compare your notes with the textual material to make sure you have included all that you consider to be important.

When listening -

1. Listen carefully for clue words such as
    - "The most important point is..."
    - "The three reasons are..."
    - "This is important because..."
2. Keep up with the speaker by jotting down the key ideas in short phrases or with single words.
3. As soon as the speaker has finished, go back over your notes to construct the statements from the key words or complete the phrases recorded earlier.
4. Add additional details or supporting statements to form a cluster with the key statement to which it is directly related.

# SAMPLE APPLICATION

## CONTENT:

Art (Ceramics)

## GRADES:

High school

## KEY WORDS

1. Introduce the strategy by doing the following:
   - Describe the steps for using key words and phrases.
   - Explain the importance of taking notes in your own words.
2. Provide guided practice by having students do the following:
   - Identify key words in a brochure about the characteristics and how-to's of using low fire and high fire clay.
   - Close the book and write notes using the key word strategy.
   - Share notes orally.
   - Discuss the choice of items deemed noteworthy and the variation in the ways in which the information was recorded.

ADDITIONAL IDEAS

1. Provide practice with notes from lectures as well as films such as one on ceramicists of Hawaii.
2. Provide additional practice with other types of reading such as news and magazine articles about exhibits, interviews with ceramicists, art critiques, and instructions on using glazes.

# BEFORE TAKING NOTES: SHORTCUTS

**WHAT** Shortcuts are the combination of symbols and abbreviations, both borrowed and created, that speed up the act of taking notes. Each student needs to devise a personal system of shortcuts that is readable yet fast and easy to use. This personal system should be built up over a long period of time with the student adding or deleting shortcuts as new ones are learned.

**WHY** Shortcuts that enable students to record notes more quickly increase the time students can spend thinking about the ideas being read or heard.

**WHEN** Students should be exposed to note-taking shortcuts at the onset of learning how to take notes. They should be encouraged to build their repertoire from primary through secondary grades.

**HOW** Steps for students:

1. Become aware of the words that are used frequently in your notes. Try to find or devise abbreviations and symbols to use for those words.

2. Try to incorporate abbreviations and symbols into your note-taking, using the following rules:

   - Don't use periods in abbreviations.

   - Use original or borrowed symbols.

   - Use abbreviations found in English and other languages.

| | | | |
|---|---|---|---|
| cf | compare | w/ | with |
| c/o | care of | eg | for example |
| etc | and so forth | lb | pound |

- Develop your own abbreviations by

    - eliminating vowels
    - using only part of the word

3. Over a period of time, try to include more shortcuts.

# SAMPLE APPLICATION

## CONTENT:

All content areas

## GRADES:

Upper elementary

## SHORTCUTS

1. Introduce students to the value of using shortcuts by doing the following:
   - Have students write "One plus two equals three."
   - Ask students to write the same thing using the symbols "+," "-," "=" and numbers.
   - Discuss their preference for writing the mathematical sentence. Most students will prefer writing the sentence as "1 + 2 = 3" because of the time and labor saved.
2. As an introduction to using shortcuts have students do the following:
   - Brainstorm a list of abbreviations, symbols, codes, that they could use to record homework assignments more efficiently.
   - Discuss some common strategies for creating shortcuts.
   - Use the strategies to create appropriate shortcuts for words to record homework assignments.

     Examples:

     | | |
     |---|---|
     | Sc | Science |
     | SS | Social studies |
     | rdg | reading |
     | p | page |
     | pp | pages |
     | # | number |

   - Use some of the shortcuts as they take notes in class.

     Examples:

     Hwk 10/15/87
     Sp test Tues
     Voc: 5 wds, wrt def & sent
     Rd SS chpt 8, pp 64-73

   - Read the notes aloud to the class to check on their readability.
3. Encourage students to continue using shortcuts in taking notes.

ADDITIONAL IDEAS

1. Provide time for students to share abbreviations for class members to guess.
2. Have students learn symbols and standard abbreviations with flashcards.

# TAKING NOTES/OUTLINING: MAPPING

**WHAT** Mapping, or webbing, uses words to create a free-form visual record of ideas from lectures and readings. Mapping requires a sensitivity to the importance of ideas and their relationships. Mapped notes can be used to introduce a unit, to take notes from books and talks, and to review at the end of a unit.

**WHY** Mapping requires that students critically analyze relationships of ideas and their details. Students capsulize those relationships and details into a single page that visually helps them see how all these elements come together to form a whole. The use of more than one of the senses helps students remember information. It has the added advantage of enabling students to add and delete ideas easily since it is not in a linear format. This free-form flexibility helps many students feel more at ease with note-taking than when they are preoccupied with format rules.

**WHEN** Students should be introduced to mapping from the time they are first introduced to note-taking in the primary grades and beyond.

**HOW** Steps for students:

1. Identify the main idea and write it in the middle of a sheet of paper (usually unlined, horizontal).
2. Draw a circle or oval around it.
3. Write the subtopics along lines that radiate from the circle or oval.
4. Add details along lines that branch from the appropriate subtopics.

# SAMPLE APPLICATION

## CONTENT:

All content areas

## GRADES:

Elementary

## MAPPING

1. Prepare students for mapping by teaching them how to categorize:

   - Ask students to identify the main topic from a list such as the following:

     cake
     ice cream
     cookies
     pie
     shave ice
     treats

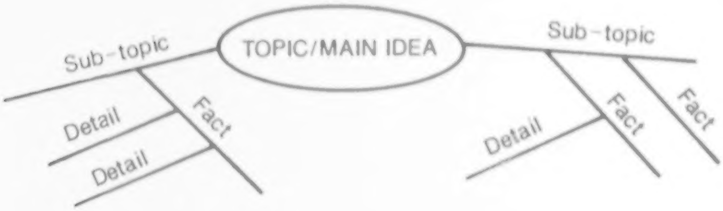
     Provide additional practice if necessary.

   - After they understand categorizing, give students a list of words from the content area being studied and have them categorize the words in many different ways. For example, "plumeria, pikake, yellow ginger, shells, gardenia, bird of paradise, ilima, and vanda orchids" could be categorized by color, or size, or fragrance/non-fragrance. Provide additional practice as needed.

   - Help students to develop skill in eliminating the extraneous and irrelevant by having them identify items that don't belong in a given category. For example, shells would be irrelevant to a category for floral leis. Provide additional practice as needed.

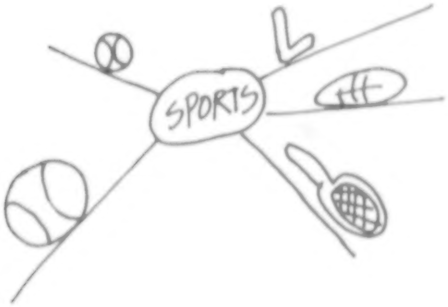
2. Introduce students to the format of mapping by doing the following:

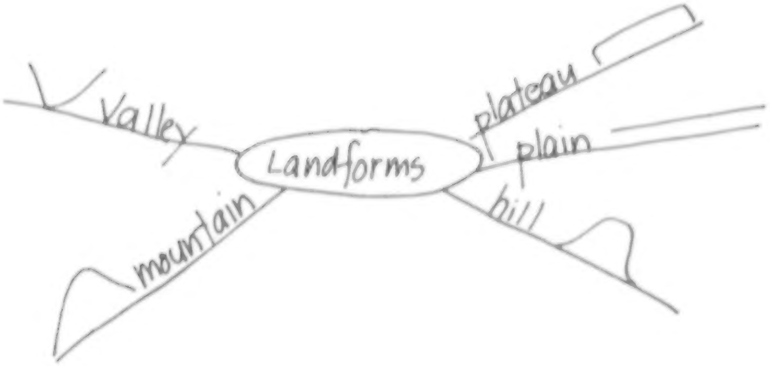
   - Show them the following simplified diagram of the mapping process and explain it.

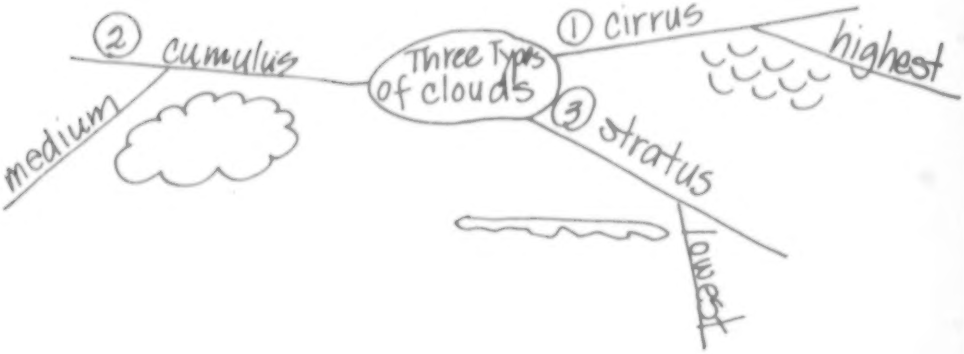


- Have them map some of the lists they categorized.

- Encourage students to include numbers and pictures as they map. The map can be purely visual or it may use both words and pictures like the examples shown below.

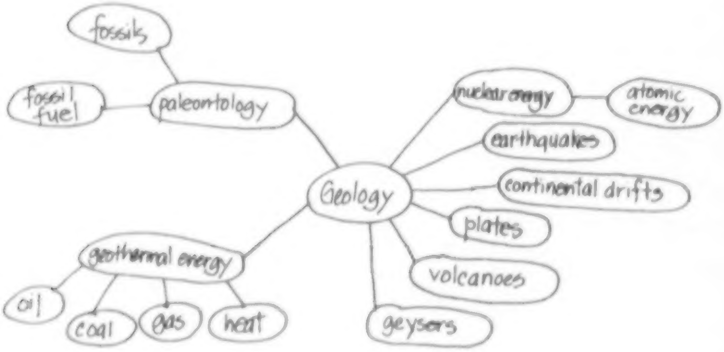



valley
Landforms
plateau
plain
mountain
hill


② cumulus
medium
Three Types of clouds
① cirrus
highest
③ stratus
lowest

(Reprinted with permission of the publisher Early Years, Inc., Westport, CT 06880. From the October 1984 issue of *Teaching/K-8* formerly *Early Years / K-8*.)

- On a large sheet of chart paper or on an overhead transparency, have students assist in doing a map of a class discussion or on a related class topic. The following example is a map adapted from one done by students in a grade 2-3 language arts enrichment class at Kahala Elementary in preparation for selecting an earth science research topic.


fossils
fossil fuel
paleontology
nuclear energy
atomic energy
earthquakes
Geology
continental drifts
plates
geothermal energy
volcanoes
oil
coal
gas
heat
geysers

- Provide a partially completed map for a text assignment or class talk. Have students complete the map. Compare the completed map with one done by the teacher.

- Have students use mapping to take notes on the class lecture or reading. Have them compare notes to check on the accuracy of the information as well as to see and appreciate the map variations.

3. Require more practice in mapping in order that students can experiment with variations.

ADDITIONAL IDEAS

1. Model mapping by using maps during talks in class.
2. Have students single out important information with highlighting pens, especially as maps become more complex.
3. Use maps as a say to organize thoughts for essays, then translate the maps into formal outlines.

# TAKING NOTES/OUTLINING: CLUSTERING (MODIFIED OUTLINING)

**WHAT** Clustering is a simplified form of outlining that is linear like the formal outline, but doesn't adhere to the strict rules of format. As the name suggests, it encourages students to cluster related ideas and determine which idea is the dominant one for the cluster.

**WHY** Clustering enables the student to efficiently give preliminary order to information whose organizational pattern is not clear enough to allow selection of a pattern, and to unstructured information that is difficult to outline.

**WHEN** Clustering should be taught to students from the time they begin to take notes in the primary grades and beyond.

**HOW** Steps for students:

1. List related information close to each other to form a cluster.
2. Begin new clusters as new ideas are introduced.
3. Add important details to items in the cluster to form clusters within the cluster.
4. Identify one of the things in each cluster as the dominant idea or formulate a phrase that describes the dominant idea conveyed by the items in the cluster. Write it above the other items as a title for that cluster.

# SAMPLE APPLICATION

**CONTENT:**

Home economics

**GRADES:**

Junior high

## CLUSTERING (MODIFIED OUTLINING)

1. Introduce clustering by doing the following:

   - Show students an illustration of clustering like this one:

Clustering

- Main point #1
  - detail
  - detail
    - fine point
    - fine point
  - detail

- Main point #2
  - detail
    - fine point
  - detail
    - fine point

- Main point #3
  - detail

   - Explain the illustration by sharing clustering done for a recent class reading assignment or talk.

Example:

Knowing about cookies

- Commonly used ingredients
  - Baking powder
    - double action
  - Cocoa
    - unsweetened
    - not instant cocoa
  - Eggs
    - usually sized as extra large, large, medium
  - Flour
    - use all-purpose flour

Measuring
- Graduated measuring spoon
    - pour till full for liquids
    - fill then level for dry ingredients
- Graduated measuring cups
    - fill then level for flour and granulated sugar
    - lightly fill then level for powdered sugar and buttermilk baking mix
    - pack lightly for nuts, coconut, and cut-up fruit
    - pack firmly for brown sugar, fats, and shortening
- Liquid measuring cup
    - read measurement at eye level

Storing
- Crisp cookies need container with tight fitting cover
- Soft cookies need container with tight fitting cover

- Point out that the clustering of the information using indentation establishes the relationship of the ideas to each other.

2. Provide guided practice using the following:

    - Prepare a partially finished clustering that students are to complete during the next class reading assignment or talk.

    - Have students compare their completed clustering with that done by the teacher.

    - Discuss slight variations since variations are possible. Also discuss major omissions that suggest misunderstanding or which could affect later recall of the information.

3. Provide additional guided practice if necessary.

4. Have students use clustering to take notes without any teacher assistance.

# TAKING NOTES/OUTLINING: FORMAL OUTLINING

**WHAT** An outline is a plan that organizes ideas. It reveals the order in which information is presented and the relationship of the ideas to each other. Although strictly administered by standard outline format rules, the outline is the most widely accepted format for organizing formally presented information.

**WHY** While outlining information, students are forced to think about the relative importance of ideas to each other, and show those relationships in a linear manner. Recall is also increased because the students are thinking about and becoming more familiar with the information as they work with it.

**WHEN** Outlining should be taught as students begin to master clustering and mapping skills in the upper elementary through secondary grades.

**HOW** Steps for students:

1. Place a title at the beginning. This is not numbered or lettered as part of the outline.
2. Use Roman numerals to designate main topics. These are written about an inch from the left margin of the paper.
3. Include subtopics in descending order by capital letters, Arabic numerals, then small letters, then Arabic numerals in parenthesis, followed by small letters in parenthesis.
4. Indent subtopics to the right of the main topic Indent divisions of the subtopics to the right of the subtopics.
5. Make sure there are always two or more subtopics because subtopics are divisions of the topic above them.

Example:

Title

- I. Main topic 1
  - A. Subtopic 1
  - B. Subtopic 2
    - 1. Detail 1
      - a. Fine point 1
      - b. Fine point 2
        - (1) Finer point 1
          - (a)
          - (b)
        - (2) Finer point 2
    - 2. Detail 2
  - C. Subtopic 3
- II. Main topic 2
- III. Main topic 3

(From *Study Tactics*, by William H. Armstrong and M. Willard Lampe II. ©1983, Barron's Educational Series, Inc. Hauppauge, New York.)

# SAMPLE APPLICATION

## CONTENT:

Science

## GRADES:

Junior high

## MATERIALS:

Large strips of paper
Wide-tip markers
Large bulletin board

## FORMAL OUTLINING

1. Introduce outlining by showing students an example of outlining schema (see previous page) and by explaining the rules of outlining.
2. Provide guided practice by doing the following activity:
   - Having earlier prepared a simple outline on ecosystems, present a brief talk based on that outline.
   - Give each student or pair of students a strip of paper with a line from the outline written large enough to be seen from the bulletin board.
   - Have the class construct the outline using the strips provided. Make sure they indent appropriately to show the relationship of the ideas.
   - Have students write the correct numerals and letters beside the strips (Fitzpatrick 1984).
3. Provide additional guided practice by doing the following:
   - Distribute a partially completed outline for a text reading assignment or class lecture and have students complete the outline as they do the reading or listen to the lecture.
   - Discuss variations and make adjustments if needed.
4. Provide additional guided practice like activity 3, especially for younger students.
5. Nurture independence in the following way:
   - Eventually have students do an outline completely on their own for a text assignment or lecture.
   - Have them compare outlines and discuss variations and adjustments.

# TAKING NOTES/OUTLINING: PATTERN RECOGNITION*

**WHAT** Pattern recognition is a strategy for identifying organizational patterns in information that is read or heard (Marzano and Arredondo 1986).

**WHY** This visual structuring of the notes is beneficial for the following reasons:

- information is more accessible to the user
- relationships between ideas are highlighted
- content is reinforced by the visual representation
- notes are remembered more quickly and for a longer period.

**WHEN** Students should be exposed to pattern recognition from the time they begin to discuss organizational patterns in the upper elementary through secondary grades.

**HOW** Steps for students:

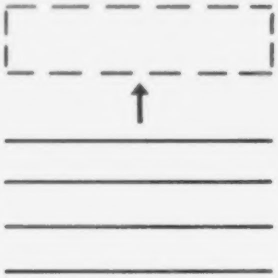
1. Pay attention to clues that indicate the pattern being used by the text or speaker.
2. Once you've recognized the pattern, identify or devise a format that would best show the relationship of the ideas (see pp. I-25 to I-29 for details).

---

* This strategy is also included in the chapters on reading (p. F-21) and research skills (p. J-36).

# BASIC ORGANIZATIONAL PATTERNS

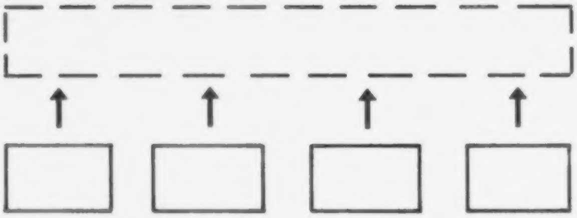
1. **CONCEPT PATTERNS**: Describe the characteristics of a single concept (word or phrase). They are commonly about persons, places, things and events.



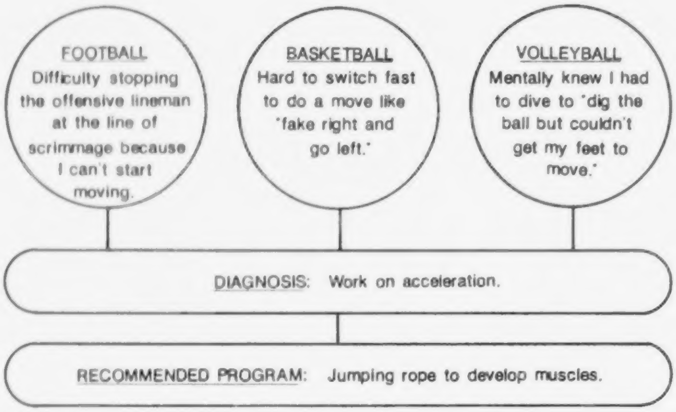
Some note-taking formats often used for concept patterns are columns, grids, and webs (mapping). The following example from physical education looks at the concept of resistance in terms of the components that affect it using a column format.

| CONCEPT | COMPONENTS |
|---|---|
| Resistance (Body Kinetics) | Body lean (angle)<br>Equipment<br>Terrain |

2. **GENERALIZATION PATTERNS**: Describe a set of statements that has an example relationship with a single generalization.



Some common note-taking formats used are column charts and webs. The following example from physical education shows a web that was made after a student identified specific problems encountered in three different sports.



FOOTBALL
Difficulty stopping the offensive lineman at the line of scrimmage because I can't start moving.

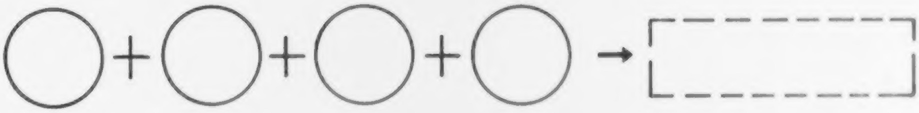
BASKETBALL
Hard to switch fast to do a move like "fake right and go left."

VOLLEYBALL
Mentally knew I had to dive to "dig the ball but couldn't get my feet to move."

DIAGNOSIS: Work on acceleration.

RECOMMENDED PROGRAM: Jumping rope to develop muscles.

3. **SEQUENCE PATTERNS**: Use repeated time relationships as the basic link among statements.

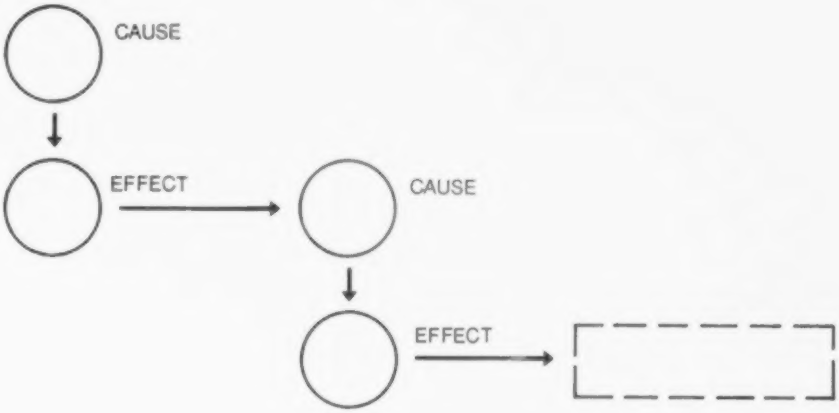


Some common note-taking formats used for the sequence pattern are numerical lists, flow charts and time lines. The following is an example of a time line highlighting important dates in football.

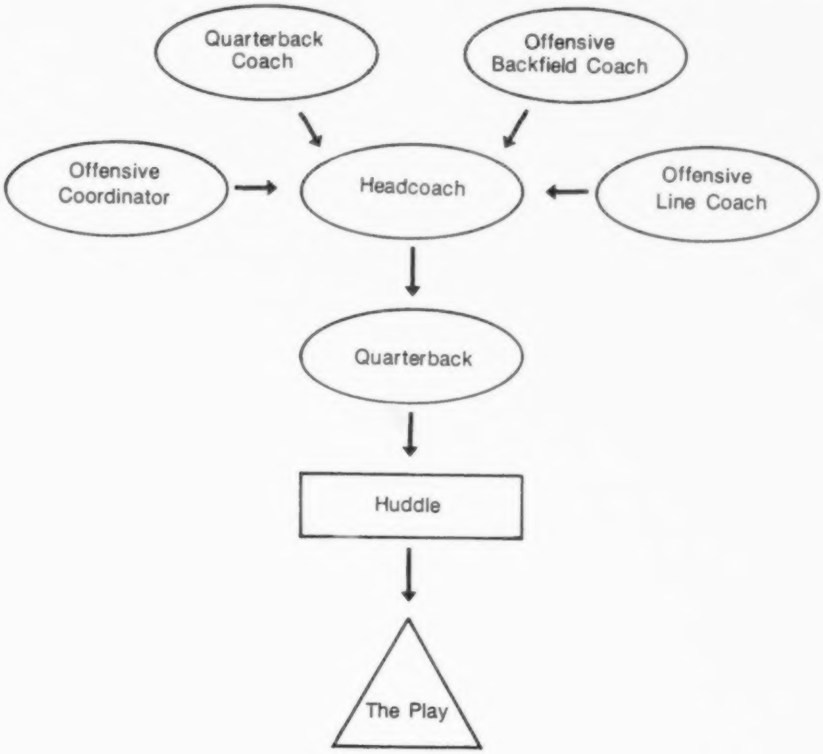
### AMERICAN FOOTBALL

| | |
|---|---|
| 1869 | 1st intercollegiate soccer-type match (Princeton vs Rutgers, 6-4) |
| 1875 | 1st rugby-type match (Harvard defeated Yale, 4-0) |
| 1876 | Intercollegiate Football Association founded by Columbia, Princeton, and Harvard |
| 1880 | Switch from "scrum" scramble to one team possession of ball |
| 1883 | Scale of scoring values established |
| 1905 | Presidential meeting called to abolish football |

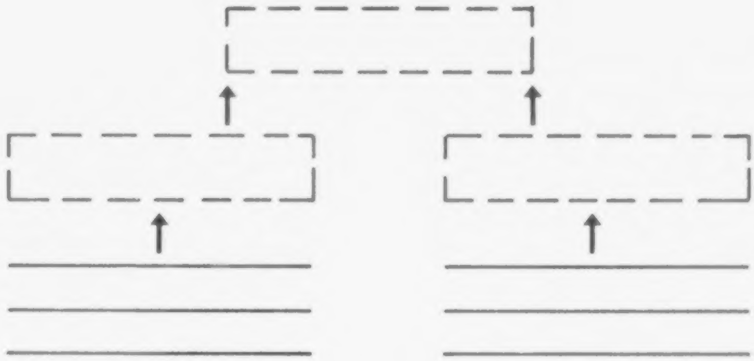
4. **PROCESS OR CAUSE PATTERNS**: Identify the causes of an event or the specific process for making something happen.


CAUSE
EFFECT
CAUSE
EFFECT

Some common note-taking formats used are numerical lists, flow charts and column charts. The following example from sports shows one type of operational structure followed in game planning.

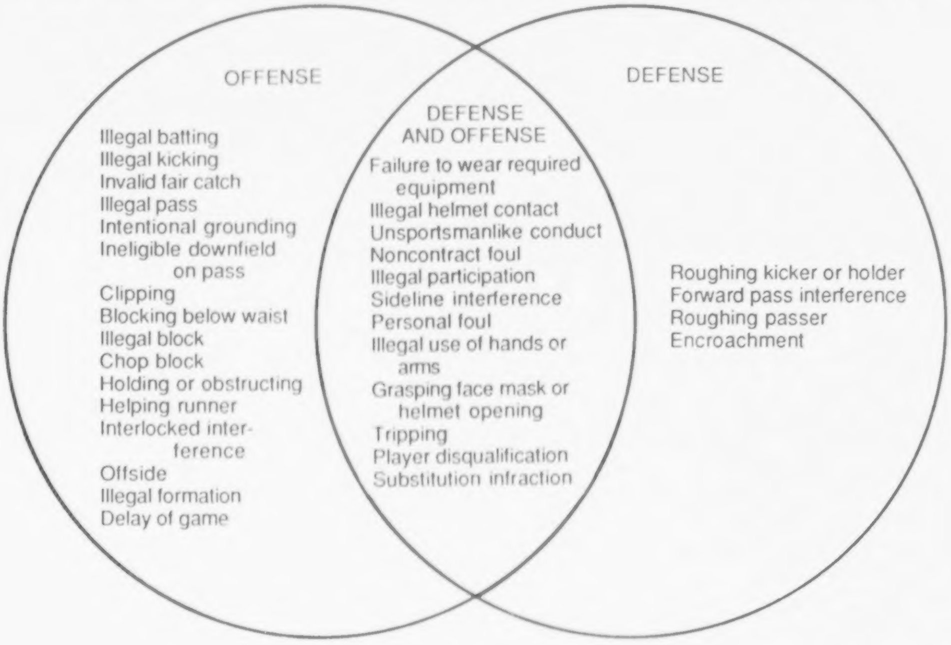

Quarterback Coach
Offensive Backfield Coach
Offensive Coordinator
Headcoach
Offensive Line Coach
Quarterback
Huddle
The Play

5. **COMPARISON AND CONTRAST PATTERNS**: Describe contrast relationships between a group of items or ideas that are similar with a group of items or ideas that are dissimilar.



Some common note-taking formats are columns, charts, graphs and venn diagrams. The example below presents the different constraints imposed on the offensive and defensive teams in football in a venn diagram.

**VENN DIAGRAM: CONSTRAINTS OF OFFENSE & DEFENSE TEAMS IN FOOTBALL**


OFFENSE
Illegal batting
Illegal kicking
Invalid fair catch
Illegal pass
Intentional grounding
Ineligible downfield on pass
Clipping
Blocking below waist
Illegal block
Chop block
Holding or obstructing
Helping runner
Interlocked interference
Offside
Illegal formation
Delay of game
DEFENSE AND OFFENSE
Failure to wear required equipment
Illegal helmet contact
Unsportsmanlike conduct
Noncontract foul
Illegal participation
Sideline interference
Personal foul
Illegal use of hands or arms
Grasping face mask or helmet opening
Tripping
Player disqualification
Substitution infraction
DEFENSE
Roughing kicker or holder
Forward pass interference
Roughing passer
Encroachment

## CONTENT:

Physical education

## GRADES:

Secondary

## PATTERN RECOGNITION

1. Prepare students for taking patterned notes by developing their skills in pattern recognition. Try the following activity:

   - Have students read a section of the class text or listen to a class talk on football.
   - Describe the different types of patterns. Have students identify the ideas and patterns used.

     Example 1: Simple listing of positions on the team with description of their responsibilities.

     Example 2: Comparison/contrast of the responsibilities of the positions on the team.

2. Introduce patterned notes by doing the following:

   - Use patterned notes to provide instruction. Ask students to identify the pattern represented by the structured notes and discuss the ease with which they can make observations, draw conclusions, and remember the information.

     Example 1: Discuss penalties and constraints in terms of the venn diagram on page I-28. Penalties are often clustered in categories by the number of yards penalized. What information is highlighted when this structure is used? What information is highlighted by the use of the venn diagram?

     Example 2: Introduce the responsibilities of team members in column format appropriate to comparison/contrast and ask questions such as "What do you notice about the responsibilities of the different positions? Which positions have similar responsibilities?

Example 3: Ask students to examine and comment on the excerpts from a student's sports journal (p. I-26) and the generalization that was developed on the basis of those observations. Discuss the advantage of grouping common concerns in order to make generalizations.

Example 4: Have students explain the flow chart for operational structure in game planning (p. I-28) in narrative form. Discuss the advantages of taking notes in the narrative form. Discuss the advantages of taking notes in the flow chart form. If students have not yet done so, have them identify the situations in which each of the forms would be more appropriate.

- As students practice pattern recognition and discuss the ideas presented in the text or lecture, use different formats for recording the ideas. Ask the students to identify which formats are most valuable in helping them understand or remember the information.

- Have students discuss their reasons for selecting those formats.

3. Provide guided practice by doing the following:

   - Have students look at patterned notes such as a chart of the strengths and weaknesses of the opposition. Discuss the possible ways in which the information could have initially been presented. Compare their theories with the originals.

   - Identify the patterns and possible note-taking formats of other assignments such as a time line of the 1987 players' strike or the categorizing of penalties (sample in venn diagram form on p. I-29).

   - Take notes in the format selected.

   - Compare notes as a class and discuss the rationale for selection of that format.

4. Develop independence by encouraging students to continue selecting or creating a variety of formats to use in patterning notes.

ADDITIONAL IDEAS

In the primary or elementary grades, use appropriate structures during class discussions on advantages and disadvantages of various solutions to problems, during discussions comparing and contrasting characters in stories or properties of different geometric shapes, and in displaying information such as the number of student birthdays in each month.

# TAKING NOTES/OUTLINING: MEMORY CLUE SYSTEM

**WHAT** The memory clue system refers to a strategy for taking notes in two or more columns. One column is used for notes taken while listening or reading and the other column or columns are used to summarize, highlight, question, and add information and comments. The use of these other columns forces the note-taker to think about the notes and personalize them.

**WHY** Depending on the use of the additional column(s), memory clues assist the note-taker in the following ways:

- helps retention
- clarifies ideas
- increases comprehension of ideas and their relationships.

**WHEN** Simple memory clues like key words and highlighting can be done from the time students begin to take notes. More sophisticated clues such as questions and applications can be taught in the upper elementary through secondary grades.

**HOW** Steps for students:

1. Determine a column format for your notes. Two commonly used formats are described below:

    - For courses in which the lectures and text parallel each other, divide the note-taking paper in three columns and leave a two-inch horizontal band across the bottom of the page. Use one column, usually the one in the middle, for lecture notes; use one column for textbook notes. Reserve the bottom horizontal band for reaction/comments.

| Memory clue | Lecture notes | Textbook notes |
|---|---|---|
| | | |
| Reaction/Comments | | |

- For courses in which the lectures and text are not parallel, use separate sheets for lecture and reading notes Divide the note-taking paper into three columns. Use the middle column for notes and one column each for the memory clues and personal reactions.

| Memory clue | Lecture notes | Personal reactions |
|---|---|---|
| | | |

2. Write notes in the appropriate column, making notations and marks, and jotting down questions in the other columns as needed.

3. When done, read through the notes and react to them in the appropriate column(s). The notations can be in any form depending on needs. Some of the most common ones are:
    - concept labels
    - questions about unclear items
    - editorial comments

- summary statements
- description of application or relationship to other concepts
- predicted questions for future quizzes and exams.

(Reprinted from *Note-Taking Made Easy*. © 1982 by Judi Kesselman-Turkel and Franklynn Peterson, with permission of Contemporary Books, Inc.)

## CONTENT:

Mathematics (Geometry)

## GRADES:

Secondary

## MEMORY CLUE SYSTEM

1. Introduce the memory clue system by doing the following:
   - Demonstrate the use of columns in note-taking by sharing simple memory clue notes taken from a future text assignment or lecture in geometry.
   - Ask students to point out statements they want expanded, to ask questions about items in the notes, and to identify what they consider important.
   - Make note of student concerns and ideas in the clue column.
   - Discuss the value of being able to make these notations in the notes column.
   - Ask students to brainstorm other kinds of uses they see for the additional column(s). Add suggestions overlooked by the students.
   - Show students the samples of column formats (see p. I-34). Explain their differences.
2. Provide guided practice by having students do the following:
   - Take notes from the geometry text or talk, making any notations or markings as needed.
   - Re-examine the notes and focus on one type of notation specified by the teacher.

     Examples:
     Give a personal example of an axiom's application.
     Point out the relationships of the corollaries to ones covered previously.
3. Provide additional guided practice by having students do the following:
   - Take notes for other text assignments or talks using the memory clue system.

- For each note-taking opportunity use the column in a different way in order to become familiar with its many possible uses.

# AFTER TAKING NOTES:

1. Notes are a means, not an end. Encourage students to take notes by providing opportunities for them to use the notes to their advantage.

2. Encourage students to experiment with a variety of note-taking forms. In this way students can discover the methods that work best for their own learning styles. In addition, practice will enable students to make wiser decisions on the appropriate strategies or forms to use for given purposes.

3. Notes that have been recorded and filed are of little value. Students need to work with their notes in order to make them useful.

   Suggest the following to students:

   - Read your notes as soon as possible after taking them. While the information is still fresh in your mind, fill in any gaps.

   - As you read your notes and highlight them, think actively about what you are reading. When you have finished, ask yourself questions about what you have read: What was this lecture about? What is the important information here? What might my teacher ask on the next test? It is helpful to write these questions at the end of your notes, for they will serve to organize any review you may do before tests and exams (Armstrong and Lampe 1983).

   - Write a summary based on the notes.

   - Highlight important information using a special highlighting pen or other marking technique. As notes become more complex, the use of more than one color or technique may be helpful as long as it's not overdone (Fitzpatrick 1984).

- Identify key concepts or ideas by writing the topic in the margins in a contrasting color.

- Anticipate questions that might be asked by someone. Make note of these questions in the section of your notes where the answer can be found.

- Combine note-taking forms (e.g. use outlining with the memory clue system to highlight key concepts).

- Add your own editorial comments; react to the notes. The best way to retain the information is by making it your own.

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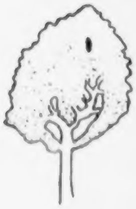


# *RESEARCH SKILLS*

## Choosing the topic

- Subdividing J-5
- Five W's J-8

## Collecting information

- Surveying J-11
- Key word searching J-12
- Using library indexes J-17
- Using primary sources J-21

## Evaluating information

- Questioning grid J-24
- Writing a thesis statement J-27
- Evaluating source materials J-29

## Organizing information

- Note card sorting J-33
- Pattern recognition J-36

## Communicating information

- Planning the presentation J-44
- Writing connection J-48

# BACKGROUND

Research is the process of locating, organizing, and utilizing information on a particular topic and for a specific purpose. The rate at which knowledge is produced in the modern age makes it vital that students learn how to deal with information in a meaningful and efficient manner. As we educate students for the twenty-first century, it is important to remember that what is known about any subject is less important than the skills of acquiring that information (Wray 1985).

The place of research in the curriculum can be justified in terms of its contribution to the total learning process. The following points represent a summary of these contributions:

- Research motivates students by capitalizing on their natural curiosity and personal interests.
- Research provides students with the opportunity for self-discovery.
- Research integrates the communication skills of reading, writing, listening and speaking with the content areas and the skills needed to locate and use information.
- Research develops skill in critical thinking and problem solving (Wray 1985, Indrisano, n.d.).

The research process includes five distinct subskills which require specific instruction and guidance. In this chapter each of these skills is considered separately because each represents a different approach to the handling of information. Strategies will be suggested for presenting each subskill and for incorporating it into the research project. The completed project can be seen as the result of having performed these five functions:

- choosing the topic
- collecting information
- evaluating information
- organizing information
- communicating information

(Wray 1985, Roth 1978).

CHOOSING THE TOPIC involves teaching students how to identify a topic suitable for research and how to narrow that topic to a specific subject.

COLLECTING INFORMATION includes teaching students how to use books and book parts flexibly and efficiently so that information can be located easily. Students must also be taught how to extend knowledge of indexing skills to use a variety of indexes and references.

EVALUATING INFORMATION includes asking questions which help students focus on the subject and limit investigations to a manageable task. Instruction on writing a thesis statement is also provided, when it is appropriate, to help students evaluate the relevance of information located.

ORGANIZING INFORMATION involves teaching students to arrange their facts, quotes and ideas around a central thesis. At this stage outlining may be introduced.

COMMUNICATING INFORMATION is the process of sharing whatever students have learned about their topics. Students learn to tailor their presentations to their subjects and their audiences. They also learn the specific skills needed to communicate in various modes.

# CHOOSING A TOPIC: SUBDIVIDING

**WHAT** "Subdividing" is a way of narrowing the topic down until students reach a subject that they are interested in researching (Roth 1978).

**WHY** Subdividing is taught because it helps the student to analyze the topic and break it up into progressively smaller parts. Its value is that it shows the relationship between the whole and the parts and allows the student to choose one of the parts to research.

**WHEN** "Subdividing" is a technique which can be used if students need assistance in arriving at topics which are suitable in terms of the students' own ability and the availability of resources. It may be presented to the entire class whenever a field-of-study assignment is made in primary through secondary grades.

**HOW** Steps for students:

1. Write down the general topic.
2. Divide topic into four or five subtopics. The table of contents of a book or a general encyclopedia article may suggest ways of dividing up the topic.
3. Further divide subtopics until a subject is reached which is both interesting and manageable in scope.

# SAMPLE APPLICATION

## CONTENT:

Language Arts

## GRADES:

Upper elementary-junior high

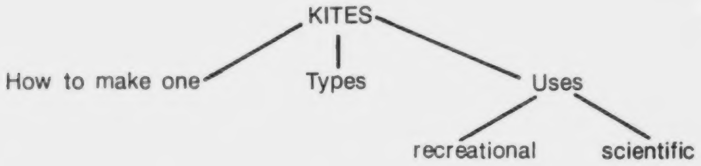
## SUBDIVIDING

1. In conjunction with a unit on library and research skills, assign students to prepare a class presentation on a hobby they enjoy.

2. Have students write down the names of three hobbies of interest to them. These names are the key words students will use in their information search.

3. Work with the librarian to have students receive instruction on locating information on these topics. One topic is ultimately chosen based on availability of information as well as student interest on the topic.

4. Using whatever information is available, have students subdivide their topics until they reach a manageable subject. For example, one student has chosen KITES as the topic. After looking at a general encyclopedia article, he subdivides the topic like this:



The topic for research becomes "the scientific uses of kites."

ADDITIONAL IDEAS

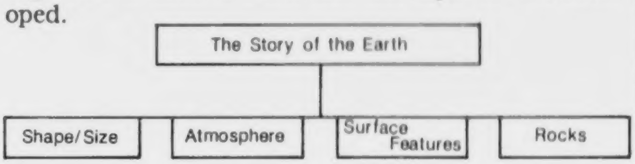
1. Working with the teacher, children in the primary grades may practice subdividing as a way of approaching units of study. For example, a gr. 1 class studying living things may subdivide the topic like this:

In small groups, students can collect information and/or pictures for one of the categories. Charts can be made by pasting pictures in the corrent category and labelling them.

2. Subdividing, used in conjunction with a structured overview or a semantic organizer, can be a valuable management tool. The completed overview can be used to introduce a unit, to guide students' progress throughout the unit, and to show the relationship between each individual's research and the main topic of study.

The following procedure shows how the structured overview the semantic organizer, and the technique of subdividing may be used to manage the research process in the classroom.

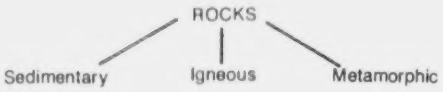
1. The teacher begins a unit of study by developing a structured overview with the class. A semantic organizer is used to show how the topic will be developed.



2. The class is divided into search teams. Each team is responsible for researching one of the subtopics. Using the earth science example, these subtopics might be:

SHAPE AND SIZE
ATMOSPHERE
SURFACE FEATURES
ROCKS

3. Each team would further subdivide the topic to decide which facet of the search each team member will be responsible for. The team studying rocks will use a visual like the following to divide up the task:



4. As students begin to survey their topics, they continue to subdivide their topics.

5. Students then add their information to the class map to complete the semantic organizer and to show how each person's research will contribute to an understanding of the topic being studied.

# CHOOSING A TOPIC: FIVE W'S

**WHAT** The "Five W's" approach refers to the use of the questions WHO? WHAT? WHEN? WHERE? WHY? to guide the coverage of a topic by generating key words which can be used to select a subject and to search for information. The key words include the following categories of details:

WHO?--people
WHAT?--problems, things, ideas, events
WHERE?--places
WHEN?--past, present, future
WHY?--causes, reasons, results, conditions
(Roth 1978)

**WHY** This strategy can be used to narrow a topic by suggesting viewpoints the student may not have previously considered. It enables the student to stand back and examine an issue objectively before taking a position on it.

**WHEN** The "Five W's" approach is most suitable for research on social issues or historical events. It is used whenever it is desirable for a student to see a research topic from many different aspects in primary through secondary grades.

**HOW** Steps for students:

1. Write down the general topic of investigation.
2. Under the topic make five columns with the headings: WHO? WHAT? WHERE? WHEN? WHY?
3. Address one question at a time and write down all the key words triggered by each question.
4. Choose a topic from one of the key words generated or combine words to form a suitable subject for individual research.

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

High school

## MATERIALS:

Prepared worksheet with columns headed: WHO? WHAT? WHERE? WHEN? WHY?

## FIVE W'S

1. Use a film, a videotape, a guest speaker, or another appropriate resource to introduce the topic of "Crime as a social problem."

2. Assign students to do research on some aspect of crime in society.

3. Prepare and distribute a "Five W's" worksheet with the topic "Crime" written at the top.

4. Cue students for key words that answer the first question, "Who?"

5. Have students write responses in the appropriate column:

CRIME

| Who ? | What ? | When ? | Where ? | Why ? |
|---|---|---|---|---|
| criminals | | | | |
| victims | | | | |
| elderly | | | | |
| teenagers | | | | |

6. Once students grasp the procedure, have them work in groups of three or four to complete the worksheet.

7. Have each group report its findings. Write new key words on the chart or the board:

CRIME

| Who ? | What? | When ? | Where ? | Why ? |
|---|---|---|---|---|
| criminals | drug abuse | 1980's | U.S. | poverty |
| victims | street gangs | 1800's | cities | race |
| teenagers | prevention | WWII | New York | laws |

8. Also demonstrate how topics can emerge by combining key words:

    - Causes of crime in the American colonies.
    - Juvenile delinquency in 18th century England
    - Race riots in the U.S. during the 1960's
    - The relationship between poverty and crime during the Industrial Revolution in London.

9. Have students, individually or in groups, use the worksheet to select their topics.

# COLLECTING INFORMATION: SURVEYING

The same strategy is defined as a pre-reading strategy in the chapter on reading skills (p. F-8). Please refer to that section for explanations and a sample application.

The strategy is important in research to help students locate information from books.

# COLLECTING INFORMATION: KEY WORD SEARCHING*

**WHAT** Key word searching is a six-part strategy used to find information in any subject index (Wehmeyer 1976).

**WHY** Students often fail to locate information because they lack knowledge of the terms used to index topics in books and in library keys like the card catalog or the *Readers' Guide*. This strategy provides a systematic way for students to generate a set of alternate terms which can be used to find the information.

**WHEN** Key word searching is taught in six steps which are intended to correspond with the intellectual development of children. Variations of these steps may be taught in primary through secondary levels.

**HOW** Steps for students:

1. Select the key word from a question or a sentence which expresses the research problem.
2. Find synonyms for the key word.
3. Look for a broader subject than the topic sought.
4. Look for a smaller subject.
5. Explore two or more aspects of a single subject.

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* A related strategy on key words is included in the chapter on note-taking/outlining skills (p. I-7).

6. In researching biographical information also consider the person's time, place, and field of endeavor. (From *The School Librarian as Educator*, by Lillian Wehmeyer. © 1976, Libraries Unlimited, P.O. Box 3988, Englewood, CO 80155. By permission of the author. A 1984 edition is also available.)

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Middle elementary

## MATERIALS:

Selection of holiday books
Encyclopedia set

## KEY WORD SEARCHING

1. Focus on a holiday which will be coming up soon by asking a probing question such as: How do you think Halloween began?

2. Suggest that the class consult the encyclopedia or a book about holidays to find the answer to that question.

3. Ask how we would know where to look for the information.

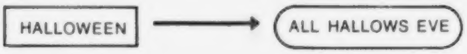
   (Focus on Step 1: The student selects a key word from the question that poses the research problem.)

4. Write the key word HALLOWEEN on the board.

5. After consulting the reference source, ask students if they know any other words for HALLOWEEN.

   (Focus on Step 2: Find synonyms for the key word.)

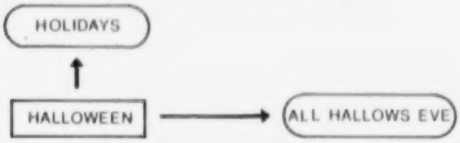
6. Add the synonym ALL HALLOWS EVE to the map:



7. Explain that the library may not have a book just about HALLOWEEN and ask for a larger word that includes HALLOWEEN.

   (Focus on Step 3: The student looks for a subject that is broader in meaning.)

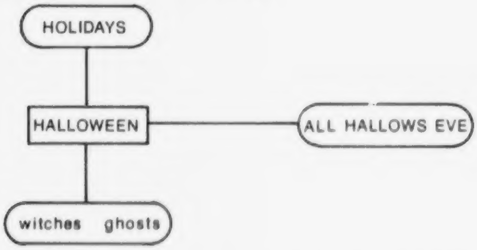
8. Write HOLIDAYS above HALLOWEEN:



9. Ask for words that students associate with HALLOWEEN.

   (Focus on Step 4: The student looks for a subject that is smaller in meaning.)

10. Add these words to the map:


HOLIDAYS
HALLOWEEN
ALL HALLOWS EVE
witches ghosts

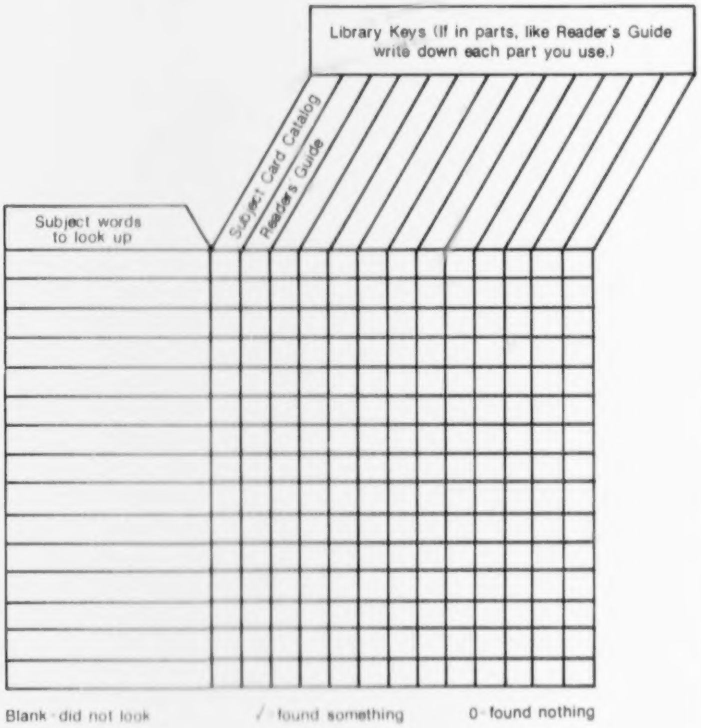
11. Explain that the words on the map are KEY WORDS for the topic we are going to research. These key words are used to search for information in the card catalog, the encyclopedia, the magazine index, the pamphlet file, and other library collections.

12. Provide guided practice by having students generate key words related to their own favorite holidays.

13. Use the list of key words to guide the search for information in the library.

ADDITIONAL IDEAS

1. This lesson can be successfully taught in the primary grades under the teacher's direction. Key words can be used to search for information in book indexes or to locate books in the card catalog.
2. A chart similar to this one may be used by high school students to record information located through the key word search.


Library Keys (If in parts, like Reader's Guide write down each part you use.)
Subject Card Catalog
Reader's Guide
Subject words to look up
Blank - did not look
✓ - found something
0 - found nothing

(From *The School Librarian as Educator*, by Lillian Wehmeyer. © 1976, Libraries Unlimited, P. O. Box 3988, Englewood, CO 80155. By permission of the author. A 1984 edition is also available.)

# COLLECTING INFORMATION: USING LIBRARY INDEXES

**WHAT** An index is any detailed alphabetical listing of names, places, topics, or titles with an indication of where information on the topic can be located. Library indexes include:

- card catalog
- periodical indexes like the *Readers' Guide*
- newspaper indexes
- microfilm/microfiche indexes
- computerized databases

**WHY** Everything in the library is accessed through some kind of index. Students need to see tools like the card catalog or the *Readers' Guide* as giant indexes. In this way, they learn to apply the skills they have learned using book indexes to progressively more complex formats like the computerized card catalog or specialized databases.

**WHEN** The ability to use an index is a developmental skill which is best taught in a meaningful context. Using textbook indexes is introduced in the primary grades and it is applied to nonfiction books and the use of the card catalog in upper elementary grades. In the intermediate grades students are taught to use the *Readers' Guide*. High school students are introduced to a variety of indexes to access information on microfilm or microfiche. Skills in the use of computerized indexes or databases are introduced as these formats become available.

**HOW** Steps for students:

1. Check the indexes of books for entries made under the key words related to the research topic.
2. Note page numbers listed for the main topic and each key word found. Check the text to locate the information.

3. Use the same key words to locate books through the card catalog. Note call numbers which will be needed to locate books on the shelves.

4. Also use the key words to search for periodical articles dealing with the topic in the *Readers' Guide*. In this case, note the name of the periodical, volume number, date and page(s).

5. Use other indexes as appropriate.

6. Make bibliography card for each source located.

## SAMPLE APPLICATION

**CONTENT:**

Health

**GRADES:**

Secondary

### USING LIBRARY INDEXES

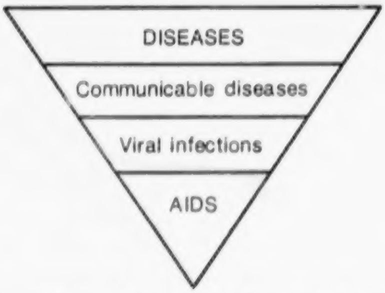
1. Introduce the topic and initiate a discussion on ways in which the topic could be narrowed for research.

2. Have students survey textbooks, reference books, and encyclopedias for key words related to the topic.

3. Ask students how diseases are classified. Elicit words commonly used to classify diseases, such as: viral diseases, bacterial diseases, infectious diseases, communicable diseases. These are identified as KEY WORDS to use in the search.

4. Elicit from students the names of some communicable diseases. Write these on the board. Examples: Measles, mumps, gonorrhea, flu, AIDS.

5. Use an inverted pyramid to show how the topic can be narrowed down from DISEASE, to COMMUNICABLE DISEASE, to the names of particular diseases.



6. Have students choose diseases from the list as topics and place them on their individual pyramids.

7. If no information is found by searching with the narrowest key word, have students take the word on the next level of the pyramid.

8. Have students use the same procedure to search in each of the following indexes:

   - card or computerized catalog to locate books
   - book indexes to locate information within books
   - *Readers' Guide* to locate current literature in periodicals

- microfiche indexes to locate current literature on microfiche
- media indexes to locate nonprint materials.

9. Have students make bibliography cards for each resource that they use. Cards should include whatever bibliographic information is needed to retrace the source of information.

ADDITIONAL IDEAS

1. Indexing is a generic skill that applies to many situations. By teaching the general concept of indexing, the teacher eliminates the necessity of giving detailed instruction on the use of every library index.

2. Many libraries today have converted their card catalogs to microfilm or computer formats. Students will be better able to deal with these varying formats if they have learned to approach the card catalog as a giant index.

3. Prior to any library search for information, it is recommended that the teacher consult with the school librarian who can serve as a resource person on:

    - identifying whatever nonprint materials are available and how they are indexed.

    - whether the library has a pamphlet file, a picture file, or other collections which might be helpful

    - specific conditions for accessing and using resources in the library.

# COLLECTING INFORMATION: USING PRIMARY SOURCES

**WHAT** Primary sources are direct sources of information that tell us about people, places and events (Carey 1983). They include diaries, letters, journals, museum exhibits, documents, photographs and people.

**WHY** Primary sources add excitement and a sense of immediacy to research. They provide students with experiences that enrich learning and promote personal growth.

**WHEN** Primary sources are used when they are the best means of getting the information. They can enhance library research in a meaningful way from primary through secondary grades.

**HOW** Steps for students:

1. Select and limit general topic.
2. List questions related to the topic.
3. Locate possible sources of information for each question. Sources may be either primary or secondary.
4. Decide upon the means of gathering information. With primary sources this may involve interviewing people, visiting sites, or collecting pictures and artifacts.
5. Draft a plan of action which takes into account preparation and practice.

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Primary-upper elementary

## MATERIALS:

Local paper, street map, telephone directory

## USING PRIMARY SOURCES

Note: Teacher discretion is recommended in adapting the unit to meet the needs of the class. For example, kindergarten classes might concentrate on locating information from a single source; or first grade classes can interview a resource person with the teacher taking notes.

1. Introduce the theme and objective. The purpose of the unit is to find out more about the neighborhood and to produce a class booklet about the immediate neighborhood.

2. Establish the geographic concept of "neighborhood" by discussing the boundaries in very specific terms and referring to a street map.

3. Have the class come up with a list of the neighborhood facilities about which they would be interested in finding out.

4. Discuss how we can find out about each of these community resources. List these on the board.

5. Divide the class into "search groups" with each responsible for finding out about one or two facilities or community resources. (For younger children, the entire class works on finding out about selected facilities under the direction of the teacher.)

6. Prepare a matrix like the following:

HOW TO FIND OUT ABOUT IT

| Place | Ask | Write Letter | Newspaper | Map | Visit | Phone |
|---|---|---|---|---|---|---|
| Schools | • | | | • | • | |
| Libraries | • | | | • | • | |
| Parks | • | • | | • | • | • |
| Stores | • | | • | • | • | |

7. Have the entire class practice conventions such as letter writing, interviewing, telephone courtesy, etc.

8. Have each group divide up the work involved in collecting information.

9. Have students gather the information and share within the groups.

10. Prepare a class booklet incorporating the findings of each group.

(Lesson adapted from *Teaching Information Skills Through Project Work*, by David Wray. Kent, U.K.: Hodder and Stoughton, 1985.)

ADDITIONAL IDEAS

1. Students of all ages may need training in interviewing techniques. This training would include:
    - deciding upon people who would be good sources of information
    - ways of contacting sources to ask for an interview, and to set a date and a time
    - making a list of questions to be asked
    - role playing the interviewing process
    - ways of recording information - notes, tape recording, videotaping, etc. (Wray 1985, Carey 1983).

2. When field trips are used as a way of collecting information from primary sources such as museums and historic sites, students should be taught how to collect information by using photographs, drawings, collections, etc.

# EVALUATING INFORMATION: QUESTIONING GRID

**WHAT** A questioning grid is a strategy used to help students focus on certain aspects of an investigation by asking specific questions relevant to the topic (McLaughlin 1987).

**WHY** Because the questioning grid helps students to evaluate specific aspects of the topic, it can be a useful tool for teaching students how to evaluate the relevance of information to the purpose of the research.

**WHEN** The questioning grid can be taught whenever it is desirable to limit the scope of the research. Its purpose is to teach students how to take notes which focus on specific questions from primary through secondary grades.

**HOW** Steps for students:

1. Select and limit the topic.
2. Make a list of possible questions.
3. Evaluate and place questions in priority order.
4. Select three or four questions most relevant to the topic. Write these questions on the left side of the grid.
5. Locate possible sources of information. Write these at the top of the grid.
6. Make notes directly on the grid.

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Upper elementary

## MATERIALS:

Worksheets with a skeleton grid

Two or more encyclopedia or reference books on American history

## QUESTIONING GRID

1. Introduce the topic and limit it to FORTS IN THE U.S.A.
2. Have students come up with a list of questions they have about the topic. List these on the board.
3. Evaluate the questions:
    - Eliminate those which call for a "yes" or "no" answer.
    - Choose three or four questions which are most relevant to the topic.
4. Write these on the grid:

| FORTS in the U.S.A. | SOURCE #1 | SOURCE #2 |
|---|---|---|
| What were some forts? | | |
| Why were they built? | | |
| What kinds were built? | | |

5. Have students work in groups to locate FORT or FORTS in indexes and encyclopedias.
6. Have students take notes in the space provided on the grid.
7. Have groups share and compare their notes.
8. Use additional sources to reconcile differences and to provide more information.
9. Have each student prepare a short report on "Forts in the U.S.A." using the grid as an organizational framework. Encourage more capable students to expand their list of questions and to consult several sources.

(Lesson adapted from "QUIP": A Writing Strategy to Improve Comprehension of Expository Structure," by Elaine M. McLaughlin. *The Reading Teacher* [March 1987]: 650-653.)

ADDITIONAL IDEAS

Teachers working with primary grades may use the questioning grid as a means of recording information on charts with whole classes. Films, filmstrips, picture books and other visual materials may be used to collect the needed information.

# EVALUATING INFORMATION: WRITING A THESIS STATEMENT

**WHAT** A thesis statement is a clear statement of the author's purpose for writing a paper. It should summarize the main idea and provide a focus for evaluating the relevance of information to be included (Starkey 1978, Roth 1978).

**WHY** A thesis statement sets limits to the investigation and suggests the kinds of information students should look for when they begin to research their topics.

**WHEN** A tentative thesis statement is written before the search for information begins. As students delve deeper into their topics, they may change their thesis statements to reflect new insights or different approaches. This skill is usually introduced in the upper elementary through secondary levels.

**HOW** Steps for students:

1. Select and limit topic.
2. Ask questions related to the purpose for researching this topic:
    - What do I want to show in my presentation?
    - What information do I want to give my audience?
3. Write a tentative thesis statement.
4. Evaluate the tentative thesis statement for clarity and directness.

# SAMPLE APPLICATION

## CONTENT:

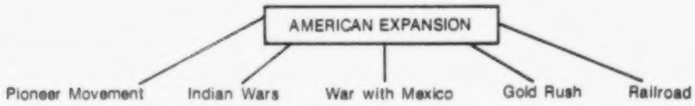
Social studies

## GRADES:

High school

## WRITING A THESIS STATEMENT

1. Using a structured overview, have the class divide the topic of AMERICAN EXPANSION into subjects for research, like this:



2. Form groups of not more than four in researching subtopics.
3. Have groups meet to discuss how the work will be divided.
4. Have students state their particular interest in the topic and the others in the group suggest five things they would like to learn from this research.
5. Have students narrow or expand their topics based on this discussion.
6. Have students write one or two declarative sentences in which they state what it is they intend to show in their research and give some indication of how they will approach their topics.

   Examples: In this paper I will compare two land routes taken by pioneers during the Gold Rush of 1849.

   In this paper I will compare life in San Francisco before and after the Gold Rush.

7. Have students read their thesis statements to the group to receive further feedback.
8. Have students use this statement as they evaluate sources of information and make decisions concerning what to include or exclude as they do research.

# EVALUATING INFORMATION: EVALUATING SOURCE MATERIALS

**WHAT** Evaluating source materials teaches students to critically judge sources for accuracy, timeliness, and relative importance to the subject.

**WHY** One of the important reasons for including research in the curriculum is that it teaches students to develop critical judgment (Roth 1978). Many students think that all information found in any published document is accurate and unbiased. It is essential that they develop some criteria for judging the relative value and usefulness of the information they choose to support their thesis or main idea.

**WHEN** The evaluation of information is on-going in the research process. Specific attention is given to the reliability of sources; however, when discrepancies surface or when students are faced with a decision concerning which materials are the best to use in the search. For this reason some instruction on the evaluation of sources should be given after students have collected a number of possible sources but before the research actually begins in the upper elementary through secondary levels.

**HOW** Steps for students:

1. Select and limit topic.
2. Locate possible sources of information.
3. Collect information from two or more sources. When discrepancies occur, evaluate the source of information using the following criteria:
    - Who is the author? What is the author's reputation in the field?

- What is the date of publication? (For some topics, timeliness is critical for accuracy.)
- When the source is a person, how credible does the person seem to be? Do other authorities endorse or refer to the person?

4. Consider the following in evaluating information:

    - How much of it seems to be fact? How much opinion?
    - Are opinions supported by facts?
    - Are both sides of controversial issues presented?
    - Does the author provide support for views presented?

5. Take notes which reflect an understanding of the information as it relates to the thesis statement or to the questions which were written to guide the research (Roth 1978, Starkey 1978).

## CONTENT:

Career Education

## GRADES:

Secondary

## MATERIALS:

Resource materials on careers

## EVALUATING SOURCE MATERIALS

1. Have each student choose a career to research.

2. Locate primary and secondary sources of information and prepare bibliography cards for each source.

3. Have students further limit their topics by drawing up a list of questions applicable to any career:

   - What tasks are done?
   - What personal characteristics are desirable?
   - What education and/or training is required?
   - What is the job outlook for this career in five years? ten years?
   - What is the salary range?

4. Have students evaluate each of their sources in relation to the questions above. Decisions are made concerning:

   - Which questions can best be answered through secondary sources (published materials)?

     - If a published source is used, what is the preferred format - a book, an article, a pamphlet, government publications, etc.?

     - Does the date of publication affect accuracy?

   - Which questions can best be answered through a primary source such as a person currently pursuing this career?

     - Who would be the best person to ask? What kind of a reputation does this person have in the field?

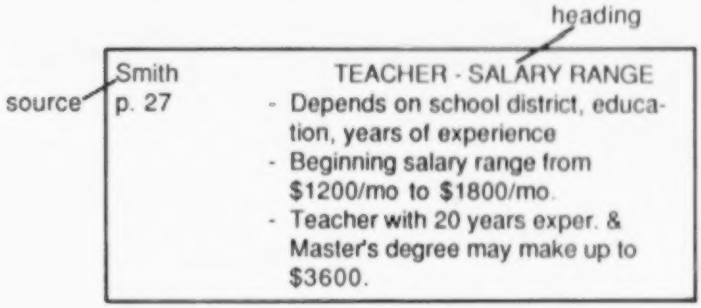
     - Should more than one person be interviewed?

   - How should differences of opinion or conflicting information be handled?

5. Have students decide which sources to start their research with, which to use as supplements, how to validate information, etc.

6. Have students collect the desired information on notecards. Separate notecards are used for each question

and each source used to answer that question. Cards are labeled to indicate the content of the note:



Smith
p. 27

TEACHER - SALARY RANGE

- Depends on school district, education, years of experience
- Beginning salary range from $1200/mo to $1800/mo.
- Teacher with 20 years exper. & Master's degree may make up to $3600.

7. Have students use two or more sources of information wherever possible. If differences appear, students evaluate the information and the sources to make a critical judgment on the reason for the discrepancy before consulting a third source.

# ORGANIZING INFORMATION: NOTE CARD SORTING

**WHAT** Note card sorting is the process of organizing notes under main headings and subheadings.

**WHY** Note card sorting gives students a strategy for organizing information gathered from many sources on several aspects of the topic. It allows students to experiment with different methods of organizing their notes for an effective presentation.

**WHEN** After students complete the process of collecting information from several different sources, they are taught how to sort and organize their note cards. This strategy is especially useful when a great many notes have been gathered from several different sources in the upper elementary through secondary grades.

**HOW** Steps for students:

1. Put a subject heading (sometimes called a "slug") at the top of each card during the note-taking process.
2. Sort the note cards into separate piles by headings after the research is completed.
3. Evaluate the notes. Discard duplicates; set aside questionable notes.
4. Sort each pile again to form subheadings.
5. Make a tentative outline with the main headings becoming I, II, III, etc., and subheadings becoming A, B, C, etc. (Starkey 1978).

# SAMPLE APPLICATION

## CONTENT:

Language arts

## GRADES:

Secondary

## NOTE CARD SORTING

1. Use the overhead projector to show a sample note card.

   - Point out the subject heading at the top of the card.

   - Identify the source to show that the same heading has been researched in different sources.

   Sample:

   Mann LETTER SLOPE Card 1
   p. 37 – Not affected by mood, fatigue, or health of subject
   – Relates to subject's approach to people. - Is he a loner? a joiner?
   – A slight forward slope indicated ability to show & feel emotion.

2. Have students sort their own cards by main headings.

3. Have students evaluate cards in each stack in relation to the purpose of the research.

   - Combine or discard duplicate notes.
   - Set aside questionable notes.
   - Change headings as needed.

4. Have students list the headings of the largest piles of notes. Point out that these are the main headings. For research on handwriting analysis, the main headings might be:

   Science of graphology
   Shape of letters
   Spacing
   Slope
   Putting it together

5. Direct students to re-sort each pile of cards looking for ways of subdividing each main heading. Using the heading SCIENCE OF GRAPHOLOGY, it may include notes on:

   - What the graphologist does
   - Relationship between handwriting and personality
   - Applications of graphology

6. Have students give subheadings to these re-sorted piles.

   Example: Science of Graphology - What a graphologist does.

# ORGANIZING INFORMATION: PATTERN RECOGNITION*

**WHAT** Pattern recognition is a strategy for identifying organizational patterns in information that is read or heard (Marzano and Arredondo 1986).

**WHY** Students often find it difficult to present their material in a coherent, unified manner. The reason for teaching pattern recognition is to help students discover the most logical way of presenting their information.

**WHEN** Pattern recognition is taught when students are arranging main headings and need to examine a variety of patterns in order to discover a workable one in the upper elementary through secondary grades.

**HOW** Steps for students:

1. Look for clues to organization in the subject itself.
2. Look for clues in the thesis statement..
3. Pre-arrange main headings until you find an organizational pattern that seems appropriate (Roth 1978). See pp. J-37 to J-41 for details.

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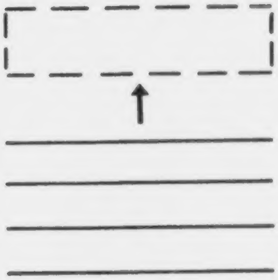
* This strategy is also included in the chapters on reading (p. F-22) and on note-taking/outlining skills (p. I-24).

# BASIC ORGANIZATIONAL PATTERNS

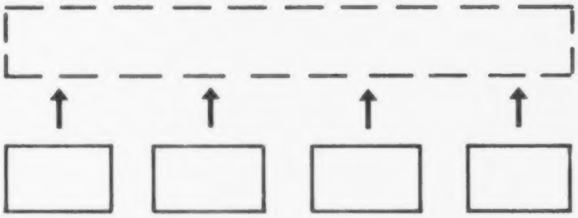
1. **CONCEPT PATTERNS**: Describe the characteristics of a single concept (word or phrase). They are commonly about persons, places, things and events.



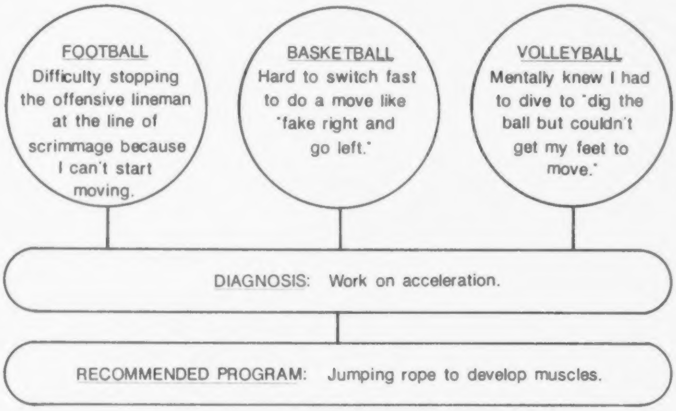
Some note-taking formats often used for concept patterns are columns, grids, and webs (mapping). The following example from physical education looks at the concept of resistance in terms of the components that affect it using a column format.

| CONCEPT | COMPONENTS |
|---|---|
| Resistance<br>(Body Kinetics) | Body lean (angle)<br>Equipment<br>Terrain |

2. **GENERALIZATION PATTERNS**: Describe a set of statements that has an example relationship with a single generalization.



Some common note-taking formats used are column charts and webs. The following example from physical education shows a web that was made after a student identified specific problems encountered in three different sports.



FOOTBALL
Difficulty stopping the offensive lineman at the line of scrimmage because I can't start moving.

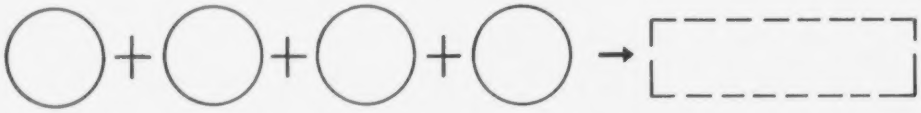
BASKETBALL
Hard to switch fast to do a move like "fake right and go left."

VOLLEYBALL
Mentally knew I had to dive to "dig the ball but couldn't get my feet to move."

DIAGNOSIS: Work on acceleration.

RECOMMENDED PROGRAM: Jumping rope to develop muscles.

3. **SEQUENCE PATTERNS**: Use repeated time relationships as the basic link among statements.

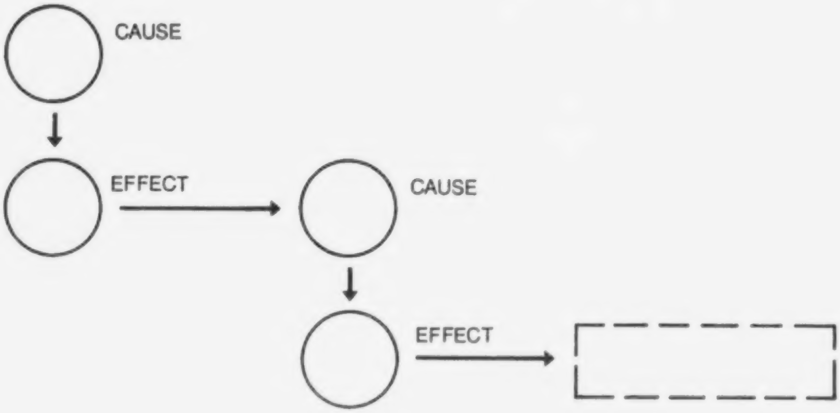


Some common note-taking formats used for the sequence pattern are numerical lists, flow charts and time lines. The following is an example of a time line highlighting important dates in football.

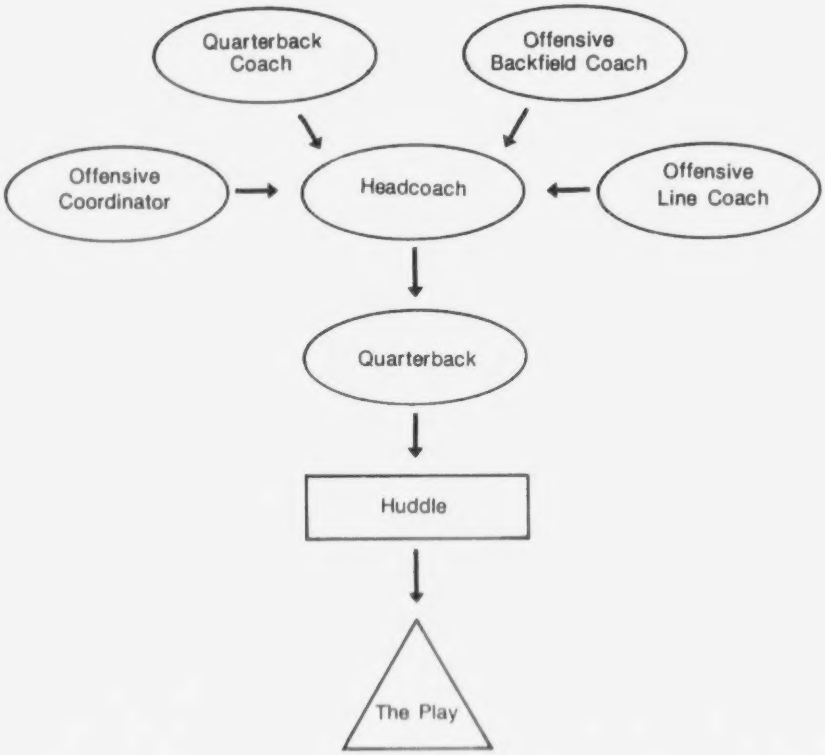
AMERICAN FOOTBALL

| | |
|---|---|
| 1869 | 1st intercollegiate soccer-type match (Princeton vs Rutgers, 6-4) |
| 1875 | 1st rugby-type match (Harvard defeated Yale, 4-0) |
| 1876 | Intercollegiate Football Association founded by Columbia, Princeton, and Harvard |
| 1880 | Switch from "scrum" scramble to one team possession of ball |
| 1883 | Scale of scoring values established |
| 1905 | Presidential meeting called to abolish football |

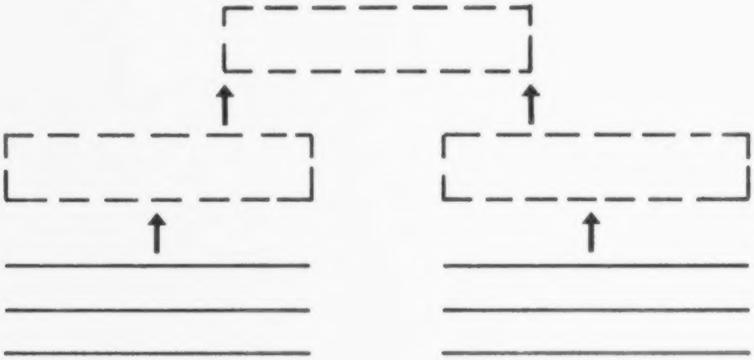
4. **PROCESS OR CAUSE PATTERNS**: Identify the causes of an event or the specific process for making something happen.


CAUSE
EFFECT
CAUSE
EFFECT

Some common note-taking formats used are numerical lists, flow charts and column charts. The following example from sports shows one type of operational structure followed in game planning.

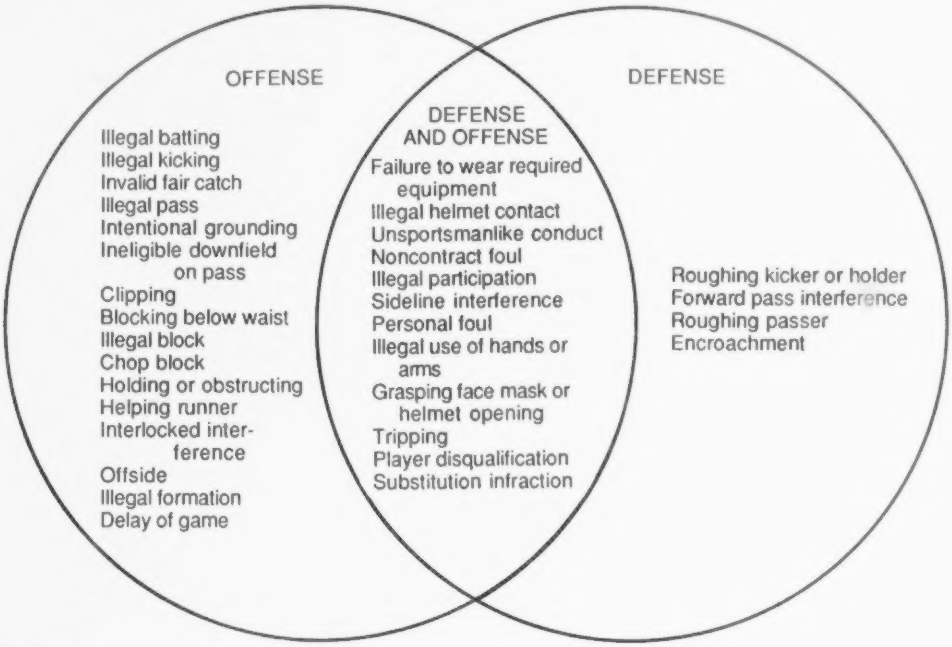

Quarterback Coach
Offensive Backfield Coach
Offensive Coordinator
Headcoach
Offensive Line Coach
Quarterback
Huddle
The Play

5. **COMPARISON AND CONTRAST PATTERNS**: Describe contrast relationships between a group of items or ideas that are similar with a group of items or ideas that are dissimilar.



Some common note-taking formats are columns, charts, graphs and venn diagrams. The example below presents the different constraints imposed on the offensive and defensive teams in football in a venn diagram.

**VENN DIAGRAM: CONSTRAINTS OF OFFENSE & DEFENSE TEAMS IN FOOTBALL**


OFFENSE
Illegal batting
Illegal kicking
Invalid fair catch
Illegal pass
Intentional grounding
Ineligible downfield on pass
Clipping
Blocking below waist
Illegal block
Chop block
Holding or obstructing
Helping runner
Interlocked interference
Offside
Illegal formation
Delay of game
DEFENSE AND OFFENSE
Failure to wear required equipment
Illegal helmet contact
Unsportsmanlike conduct
Noncontract foul
Illegal participation
Sideline interference
Personal foul
Illegal use of hands or arms
Grasping face mask or helmet opening
Tripping
Player disqualification
Substitution infraction
DEFENSE
Roughing kicker or holder
Forward pass interference
Roughing passer
Encroachment

**CONTENT:**

Language arts

**GRADES:**

Secondary

## PATTERN RECOGNITION

1. Refer to the lesson on "Handwriting analysis" (p. J-34). Use transparency to show the main headings in random order:

    Shape of letters
    Science of graphology
    Spacing
    Slope

2. Discuss the following:

    - Does the subject itself suggest a particular organizational structure?
    - Provide the following thesis statement: "In this paper I will show how handwriting analysis can provide clues to personality."

      Decide whether this statement contains a clue to the arrangement of main headings.

3. After a discussion of each possibility, have the class decide on the most effective way of arranging the main headings. Record this information in outline form.

4. Instruct students to look at their own subject to see if it suggests a specific arrangement.

    Example:

    - If the subject is historical, students may identify the sequence pattern as most suitable.
    - They then organize main headings by putting them in chronological order.

5. If no clear organization emerges, tell students to arrange main headings according to one of these patterns:

    - from simplest to most complex or from most complex to simplest
    - from the most general heading to the least general
    - from the most familiar to the least familiar.

6. Have students put their organizational patterns down on paper either in the form of an outline or as a visual diagram.

7. Have students use the outline or diagram as a plan of action as they work on the final presentation.

# COMMUNICATING THE INFORMATION: PLANNING THE PRESENTATION

**WHAT** Effective communication of information requires careful planning. The student's personal goals, the nature of the audience, and the subject itself must all be taken into consideration in planning the final presentation.

**WHY** In the process of locating, selecting, and interpreting information, the student may lose sight of the end product. Recent work in the communicative arts suggests that students need to aim their work at a variety of audiences and to experiment with a wide range of formats. Skillful use of the communicative arts is an essential part of the research process.

**WHEN** At the beginning of the project in the upper elementary through secondary grades, students should know who the audience will be for their final presentation and what possible formats their end products might take. After the work of researching the topic is completed, however, there is a need for more precise instruction which focuses on planning and rehearsing the final presentation. At this point, audience and format are primary considerations.

**HOW** Steps for students:

Before making a presentation ask the following questions:

1. What exactly do I want to show in my presentation?
    - What is my MESSAGE?
2. Who will be in my AUDIENCE?
    - Is the material suitable for this audience?
    - What can I do to gain their attention?
    - How can I keep them interested throughout the presentation?

3. What would be the best FORMAT considering:

   - my audience
   - my subject
   - my purpose in doing this research?

4. Do I have the RESOURCES to make the kind of presentation I have decided upon? These might include:

   - equipment
   - people
   - supplies

5. How much TIME is allotted for my presentation?

6. How much SPACE will be required?

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Secondary

## MATERIALS:

Overhead projector, transparencies

## PREPARING THE PRESENTATION

A social studies class has been learning how to conduct surveys in order to study a problem. As a culminating activity, students will conduct a survey of their own which will be presented to the entire class.

1. Before students present their findings to the class, help them to plan by using a sample research project:

> SAMPLE PROJECT
>
> One student decided to observe pedestrians at a busy intersection to see how often people observed traffic signals. His research was to be presented to the city's department of public safety which was seeking ways of decreasing the number of pedestrian accidents. The report was to include the following headings:
>
> PURPOSE: (Why was the survey conducted)
>
> PROCEDURE: (How the survey was conducted)
>
> RESULTS: (What the survey showed)
>
> CONCLUSION: (A proposed solution to the problem)

2. Have the class suggest ways for the student to present the information.
   - Purpose - to study pedestrian behavior at traffic lights
   - Audience - City Department of Public Safety
   - Format - oral presentation
   - Visual/auditory aids or props - graphs and charts showing results, a map of the intersection
   - Time allotted - 10 minutes
   - Space - not relevant

3. Suggest alternative ways of presenting the information that might be more appropriate for other projects:

   Pamphlets or booklets
   Wall charts
   Displays including photographs, art work, etc.
   Video presentations
   Filmstrips
   Dramatic presentations
   Forums or debates

4. Have students plan their own presentations.

(Lesson adapted from *How to Write a Report*, by Gerald Newman. Danbury, CT: Franklin Watts, 1980).

ADDITIONAL IDEAS

Another effective format for this particular sample application would be the use of a video camera. This would allow re-run analysis of a complex subject that would also lead to use of selected portions in the final presentation.

# COMMUNICATING THE INFORMATION: WRITING CONNECTION

**WHAT** Regardless of the format that is used to communicate the information, some writing is usually required. It may be in the form of a dramatic script, captions for visual displays, or a formal written report. The important thing is for students to transfer their knowledge of the writing process to the new situation.

**WHY** Although the writing process is taught as a part of the language arts curriculum the skill of writing needs to be used in a variety of situations. Students need instruction which applies general knowledge about writing to tasks that require writing to inform and to promote ideas (*State Writing Improvement Framework* 1980).

**WHEN** After the student has determined who the audience will be, what format will be used for sharing the information, and what kind of organization will be followed, some instruction on report writing should be given in the upper elementary through secondary grades.

**HOW** Steps for students:

PRE-WRITING

(This is addressed in the other strategies in this chapter.)

COMPOSING

1. Get started.

    - One place to start is with the thesis statement. Come up with a good introduction by rewording and expanding upon it.

- If there is no thesis statement, try summarizing the entire report in two or three sentences.
- Start with an interesting fact or an anecdote, a quotation or a definition. "Hook" readers so that they will be eager to read on.

2. Keep on track.

   - Refer to your outline and check off notes as you use them.
   - Concentrate on writing down ideas in the order planned.
   - Pretend you are explaining your topic to a friend who doesn't know much about it.
   - Use clear, precise language to get ideas across.
   - Concentrate on writing one paragraph at a time by breaking your outline into sections.
   - Write as much as you need to acknowledge the original contributions of others and to validate information.

3. Give credit where credit is due.

   - Footnotes are needed to acknowledge the original contributions of others and to validate information.

REVISING

4. Take a break and then revise your work.

   Ask yourself:

   - Did I do what I set out to do?
   - Do my thoughts flow smoothly from sentence to sentence? Paragraph to paragraph?
   - Did I provide information to support my opinions?
   - Is there unnecessary repetition?
   - Are the introduction and conclusion effective?

EDITING

5. Check on language, grammar, style and spelling.

- Read it aloud to pick up errors--incomplete sentences, words that are repeated, awkward expressions, etc.

- Use the dictionary to check spelling, find synonyms.

6. Regardless of the format used to share the information, include a bibliography which lists in alphabetical order all the resources used in the research.

SHARING/EVALUATION

7. Form a writing group with a few friends and help each other to edit (James and Barkin 1980).

# SAMPLE APPLICATION

## CONTENT:

Language arts

## GRADES:

Secondary

## MATERIALS:

Variety of reference books related to research and writing

Overhead projector, transparencies

## WRITING CONNECTION

### PRE-WRITING

1. Introduce students to the books which writers use as "tools of the trade." These should include:
   - dictionary
   - thesaurus
   - books about writing style
   - selection of research handbooks or manuals.
2. Make a transparency with a sample outline and a thesis statement. Discuss ways of getting started by:
   - looking at the thesis
   - summarizing the entire research in two or three sentences
   - identifying an interesting fact, an anecdote, or a quotation which will capture attention.
3. Discuss the function of the outline - to keep the discussion on track.
   - Show how the outline can be divided up to make paragraphs.
   - Have students practice orally making sentences and constructing paragraphs which correspond to the outline.

### WRITING

1. Encourage students to check off items on the outline as they write.
2. Emphasize writing as communication by allowing students to solicit feedback from their peers as they progress through the composing process.
3. Be sure the reference books and style manuals are available for technical assistance as students work.

### POST-WRITING

1. Make transparencies of one or two students' papers.

2. Use the questions on p. J-49 to guide students through a first reading focusing on REVISION OF CONTENT.

3. Have students share their work in small groups. Have them use the same questions to offer constructive comments focusing on clear and complete communication.

4. Have students use this input or their own evaluation to revise the content of their work.

5. As a class, go through a second reading of the sample paper and edit for grammar, spelling, punctuation, style, etc.

6. Have students use a pencil to circle any possible mistakes on their own papers. They may consult reference books, other students, the teacher, or any other source to edit their work.

7. Organize the research into final form.

ADDITIONAL IDEAS

1. If students have been given ample opportunity to discuss, to confer, to edit, and to receive feedback, the end product should represent the best work that they are capable of producing. The teacher's role is to provide feedback on strengths and to suggest improvements for future efforts.

2. The outline is often seen by students as an isolated activity separate from the rest of the research project. It is important to point out the reasons for making an outline:
    - to list the main points
    - to establish the order of presentation
    - to let the reader know what is coming up next.

3. Stress the need to credit the ideas of others through footnotes or endnotes. These include:
    - little-known facts
    - opinions of others expressed in your research
    - direct quotes.

4. Refer to the *State Writing Improvement Framework* (Department of Education, 1980) and appropriate district writing guides for more information on the writing process.

5. A word on word processing:

When a new tool becomes an extension of the hand and mind, the way is open for creative progress. The use of microcomputers and word processing software is changing how teachers and students approach writing. Because we are only beginning to feel the impact of this change, its implications still challenge us. Here are some thoughts to consider:

- When students find that they can check a printout of their work and easily make changes to it by recalling their file and making decisions, insertions and other changes, their personal standards for their finished work go up. They expect more of themselves.
- When students use a spell-checker to review and typographical errors, their spelling improves. It becomes a challenge to better their "score."
- When the responsibility for revision no longer includes the chore of retyping the correct copy as well as the changed parts, the effort of revision becomes more focused on what needs to be improved.
- Typing skills accelerate when students switch from typewriter to computer. Some students may have computers that permit Dvorak keyboarding and may elect to use it.
- On-screen editing (cut, paste, block-move) promotes a more experimental, freer style of writing. Students can more easily try their ideas, knowing that a key-press will wipe the slate clean.
- It is not uncommon to find students who, because of problems such as eye-hand coordination, consider themselves non-writers turning completely around and becoming avid writers when introduced to word processing.

- Because printing can be formatted with different font styles and page layouts, students quickly learn to make their work more attractive. This effort is extended when the product is a newsletter or includes graphics.

- Teachers whose students use personal home computers for writing assignments can with confidence demand a higher level of editing and revision.

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# *TEST-TAKING SKILLS*

**Preparing the test:**

- Learning log K-5
- Memory techniques K-10
  - Mnemonic devices
  - Memory framework
- Study management K-16

**Taking the test:**

- Essay test K-21
- Test-taking techniques K-28
  - General strategy
  - Multiple choice
  - True-false
  - Matching
  - Short answer/completion

**After the test:**

- Learning from the test K-36
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# BACKGROUND

Students are regularly confronted with test situations. With their test results, teachers are able to make judgments on which students "test well" and which don't. This suggests that success on a test goes beyond knowledge of a test's content. In developing test-taking skills, a student learns to deal with what is being tested--the content of a test--as well as to acquire test-wiseness--an awareness of strategy and approach in the test situation. Readiness to take a test, then, combines advance preparation with exam technique (Rowntree 1983).

Students who have knowledge of the material covered by a test may be so thrown by the format of the questions that they leave the test site without having shown how much they really knew. On the other hand, classmates, equipped with both content mastery as well as test-wiseness, emerge as students who have learned the material well, when, in fact, both types of students possess similar bodies of knowledge.

Test-takers with test-taking skills can give valid indicators of their mastery of the content on tests. Teaching test-taking skills is showing students what to do:

- before the test, when they deal with what is being tested;
- during the test, when they deal with being tested; and,
- after the test, when they examine the strengths and weaknesses of their performance before and during the test.

Doing well on tests requires steady, consistent effort. The strategies covered in this chapter cannot be used to master material the night before the test; the techniques themselves also require practice.

The teacher must gauge student readiness for the various strategies. Not only must appropriate stages for introduction be recognized, but decisions about moving students from practicing under teacher direction to independence are also critical.

# PREPARING FOR THE TEST: LEARNING LOG*

**WHAT** The learning log is a means to review information through a short writing assignment. In writing in the learning log the student is:

- re-engaging with content already encountered
- attaching words to ideas while clarifying them, restructuring them, or making applications on them.

**WHY** If students are to do well on a test, its content must be understood. The learning log is a means to provide review. Articulating ideas on paper allows for increasing mastery, giving students a deeper familiarity with the topic than when they began the assignment. The use of the learning log for test preparation is acknowledgment that such preparation begins when instruction does, rather than just prior to a test with last minute cramming of large masses of material.

**WHEN** The learning log is an activity which can be used throughout a unit of study when another look at material is necessary. This utilization of writing as a tool for learning is applicable in grades 4-12; however, given strong teacher direction and student readiness, it may be used even earlier.

**HOW** Steps for students:

1. After receiving new information, or old information with new details, write to a question posed by the teacher (the writing prompt).

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* This strategy is also included in the chapters on listening (p. E-28), reading (p. F-35) and media-utilization skills (p. H-32).

2. Based on the writing prompt restate main points or explore related ideas. A primary aim here is to gain a better understanding of content.

3. Eventually, create your own learning logs with writing prompts provided by both your teacher and yourself.

## CONTENT:

Social studies

## GRADES:

Upper elementary-junior high

## MATERIALS:

Social studies text, readings, AV materials, etc., which pertain to a unit on citizenship

## LEARNING LOG

Throughout the unit students can be given different writing prompts to enable them to re-engage with content. A suggested sequence is:

Learning log #1 (following pre-reading and reading activities on citizenship) What are some of the important ideas about citizenship provided by the chapter?

Follow-up to learning log #1

- Exchange learning logs with a partner. Read what your partner has written.
- Have a group discussion based on:
  - sharing of what was read from partner's learning log
  - which ideas were repeated most often
  - which ideas were most unusual.
- Add to your learning log any important ideas on citizenship you might have missed.

Learning log #2 a, b, c

Describe your duties and responsibilities according to rules set by:

a. your family
b. the community in which you live
c. the government.

Follow-up to learning log #2 a, b, c

- Read over the descriptions of citizenship rules and responsibilities you have written.
- Do learning log #2d:
- What general statements can you make about all three sets of descriptions?

Learning log #3

Describe the behavior of a person who doesn't understand what citizenship is. What group would this person belong to, a group whose members would have similar behavior?

Follow-up to learning log #3

Write a "Guide to citizenship" for a group which needs to strengthen its understanding of the concept.

In the various learning logs students encounter different approaches to the citizenship concept, thus strengthening their understanding of it.

ADDITIONAL IDEAS

1. In the learning log the writing prompt should be tailored to enable students to deal with information covered.

   The teacher, in posing the question, may adjust the writing prompt to adapt to students' abilities, to difficulty of material, or to student interest. Students can be given different ways to review material, as they:

   - restate or summarize main points
     - What are some of the important ideas covered in discussion today?
     - What are three questions that can be answered by the chapter?
   - move beyond ideas covered
     - What are three questions which might have been, but were not answered by the chapter?
     - What might have happened if...?
   - examine ideas for validity
     - With which ideas discussed today are you most likely to be in agreement?
     - Which ideas discussed today do you find to be the weakest?

The students, in attending to the writing prompt, will be practicing freewriting, allowing ideas to flow freely on paper, without concern for organization and mechanics. Until they become proficient at freewriting, they should be reminded:

- to write whatever ideas come to mind quickly before they are lost.
- to continue writing, even if they need to write the prompt to get started or restarted.
- not to stop to make corrections in spelling, punctuation, indentation, etc.

2. Following writing in the learning log, a variety of follow-up activities may take place:

   - the entry can be saved for connection with a subsequent entry;
   - students can be directed to read over their logs, underlining portions they feel contain important information;
   - learning logs can be shared with a partner for the purposes of exchanging or confirming important information; or,
   - learning logs can be used as a starting point for another class activity such as a class discussion or other assignment.

3. The ultimate end in the learning log is self-direction of the student. When this can take place will vary greatly from student to student. To work towards this end, the teacher can furnish students with broad writing prompts which fit a variety of situations, similar to those listed above.

# PREPARING FOR THE TEST: MEMORY TECHNIQUES

**WHAT** Memorization is the remembering of details. When information is being memorized, the mind is called upon to perform computer-like functions in storing information for later retrieval. Memory techniques are helpful in organizing the memorization process.

**WHY** Memory techniques are useful in test situations which require direct recall of information. Beyond that is the recognition that memory is the basis for much learning (Divine and Kylen 1979). Certain instructional situations require students to memorize crucial bits of information for later application in different contexts.

**WHEN** Once they are in a classroom, students are asked to remember details. It seems appropriate, then, that they be shown ways to organize the memorization process from kindergarten. In the earlier elementary grades, teacher placement of information into the memory technique for students is necessary. As they grow older, it is useful for students to be taught general techniques to be used as need arises.

**HOW** Steps for students:

1. Identify crucial pieces of information.
2. Apply a memory technique to commit information to memory.

## CONTENT:

Language arts

## GRADES:

Upper elementary-junior high

## MEMORY TECHNIQUES/ MNEMONIC DEVICES

Have students do the following:

(Strategy 1 - make a word)

1. Copy the eight parts of speech: nouns, verbs, adjectives, adverbs, prepositions, pronouns, conjunctions, interjections.
2. Write the first letter from each of the names of the parts of speech.
3. Make words or a word that uses all the eight letters.

   Example: PAVIN CAP (a concrete thinking cap to help remember preposition, adjective, verb, etc.)
4. Make up at least one more word.

(Strategy 2 - make a sentence)

5. Also make a sentence to help recall the eight parts of speech. First, arrange the letters from #2 in any order you want. List them, one per line, on your paper. Then make up a silly sentence. Each letter is the beginning letter.

   Example #1: Very proud convicts in prison now advertise addresses.
   Very = verb, proud = pronoun, etc.
   Each word in the sentence contains the same first two letters as the name of a part of speech.

Example #2:

| | |
|---|---|
| P = puny | preposition |
| A = ants | adjective |
| C = can | conjunction |
| N = never | noun |
| I = invade | interjection |
| V = very | verb |
| A = airtight | adverb |
| P - places | pronoun |

Each word in the sentence contains the same first letter as the name of a part of speech.

(Lesson taken from *Survival Kit*, Hawaii English Program - Secondary. Honolulu: Department of Education, 1977.)

## CONTENT:

Language arts

## GRADES:

Upper elementary-secondary

## MEMORY TECHNIQUES/ MEMORY FRAMEWORKS

1. Demonstrate for students the power of memory frameworks by recalling ten items or more that they call out to you. Before they begin calling out items, challenge them to a contest--who can remember the most items.

2. After the demonstration, explain to students that you were able to recall the items as well as you did because you used a simple technique--not because your memory is better than theirs.

3. Explain to students that you used a "memory framework" into which you deposited the information they called out to you. Ask students to think of a memory framework as a chest of drawers in the mind.

   The steps the student takes in using a memory framework are:

   - Memorize the framework.
   - Identify information you wish to remember.
   - Organize the information into a list.
   - Deposit the information in the slots of the memory framework.

4. Present students with the rhyming pegword method. Model how information would be deposited in one of the slots, then present students with nine unrelated items and have them deposit those items in the remaining nine slots.

   **RHYMING PEGWORD**

   The pegword method is one type of memory framework with a limited number of slots. Example:

   1. is a bun
   2. is a shoe
   3. is a tree
   4. is a door
   5. is a hive

6. is a pile of sticks
7. is heaven
8. is a gate
9. is a line
10. is a hen

If students wanted to deposit information in slot #1, they would form a mental picture that includes the first piece of information to be memorized and the pegword for slot #1. For example, assume students wanted to deposit the following information about Christopher Columbus in slot #1:

- He discovered America in 1492.
- He sailed with three ships.
- The popular opinion was that he would sail off the end of the world.

Students would try to form an image of this information that includes the pegword "bun." They might imagine a large bun sailing across the ocean. Christopher Columbus would be standing at the bow of the bun. Two other buns (ships) would also be sailing. They might picture the end of the world with water rushing off it like a waterfall.

5. Immediately test students' ability to recall the items in the ten slots.

6. Have students share their experiences with the rest of the class.

(Lesson adapted from *Tactics for Thinking*, by Robert J. Marzano and Daisy E. Arredondo. Aurora, CO: Mid-Continent Regional Educational Laboratory, 1986.)

ADDITIONAL IDEAS

1. The following may be used as bases for memory techniques:

    - memory devices which place information into patterns or rhymes, rhythm, melodies, acronyms (initial letters of key words spelling letters of a word), acrostics (initial letters of key words serving as the basis for a sentence or phrase)

    - associations which connect new information to what is already known or in absurd ways (Divine and Kylen 1979, Gilbert 1983, Marshak 1979).

2. The following guidelines are helpful in developing memory techniques:

   - a variety of modes to accommodate various styles of learning (saying things out loud; visualization of information; tracing or writing key words)
   - reorganization of information into meaningful clusters
   - reduction of large amounts of information into a few key words to be memorized
   - dividing information into small, manageable clusters (Gilbert 1983).

3. Because students often lack experience with and knowledge of content, they are not always able to make valid judgments on the significance of pieces of information. Therefore, it is important that the teacher play a strong part in the determination of whether bits of information are worthy of memorization.

# PREPARING FOR THE TEST: STUDY MANAGEMENT

**WHAT** While they are reviewing material for a test or exam, students should also be aware that various factors can produce a system to their study. They include organizing both the material they are studying and the time spent preparing for a test as well as joining study groups.

**WHY** Organizing study enables the student to avoid a hit-or-miss approach to preparing for a test. A systematic plan allows for more proficient use of time and energy, resulting in more efficient study. In addition, when considering how to organize information, how time should be distributed, or which areas should be taken up with classmates, the student is taking a broader look at material which is about to be studied.

**WHEN** Students should practice and use study management skills on days preceding a test (the day before for smaller tests, more days in advance for larger tests and exams). In primary grades, these skills can be practiced under teacher supervision. As students become more adept at the techniques of study management, they can be expected to gradually assume responsibility for managing study.

**HOW** Steps for students:

1. Organize material for study:

    - Identify all sources of information for the unit to be tested. Gather all materials needed to study.

    - Think of subtopics into which the unit can be divided. Segregate materials gathered into subtopics.

- Look over the materials; make decisions about:

  - which information you know well
  - which information you need to give more time to
  - which information you feel is most likely to appear on the test.

2. Schedule study for tests:

   - Schedule the following for study first:

     - those portions least understood, or
     - those portions covered in the middle of the unit (what was covered at the beginning and end are probably retained most strongly).

3. Arrange group study:

   - In putting together a study group, look for:

     - classmates who are genuinely concerned about learning and doing well on tests
     - study group members who are strong in your weak areas, weak in your strengths.

   - In a study group:

     - share questions each member has written as potential items on the test
     - practice answering the questions
     - go over areas members have identified as weaknesses
     - go over questions from old tests and quizzes, homework, textbooks (Armstrong and Lampe 1983, Gilbert 1983, Rowntree 1983).

# SAMPLE APPLICATION

## CONTENT:

Science

## GRADES:

Upper elementary

## STUDY MANAGEMENT SKILLS

1. Divide the current unit of study into three or four categories or subtopics. For example, the study of various plants could be divided into:

    - germination rates
    - nutrients needed
    - growth medium

2. Have students identify areas they know about and form groups of three to five members depending on size, make-up of class. Each group should have members with varying strengths in understanding of the different subtopics, but students should understand that equal distribution of strengths is not always possible.

3. Assign a group study task (i.e., share questions written by each group member as possible test questions, practice answering questions).

4. Have student fill out a checklist monitoring study management skills, with teacher supervision as necessary. (See sample checklist on p. K-20.)

ADDITIONAL IDEAS

1. Group study can be organized across a wide range of grade levels and content areas.

    Examples:

    - a unit on community helpers could be divided into the duties and responsibilities of
        - police officers
        - mail carriers
        - firefighters

    - a unit on the Civil War could be divided into
        - causes/events leading to the war
        - important battles
        - results of the war

- a unit in geometry on special triangles could be divided into
    - right triangles
    - isosceles triangles
    - equilateral triangles
    - 30°-60°-90° triangles

2. The teacher determines when students are ready to use different techniques and when they are ready to practice study management on their own.

3. The goal in study management skills is to have the student self-direct and monitor behavior. Periodic checks by the teacher may be necessary to ensure the student is managing study with reasonable efficiency. A checklist for student assessment can be used to indicate to both the student and teacher how well study is being managed.

4. Teacher-directed study management can be planned the day before a test. Students can then simultaneously practice study management and review for a test.

## CHECK LIST

| | Always | Sometimes | Never |
|---|---|---|---|
| When I study for a test: | | | |
| 1. I remember to bring together all the materials I need. (Can you study uninterrupted without having to look for things?) | ____ | ____ | ____ |
| 2. I know enough about what the test will cover that I can break the information down into subtopics. | ____ | ____ | ____ |
| When I schedule studying for a test, : | | | |
| 3. I plan time according to how well I know material. | ____ | ____ | ____ |
| 4. I follow the schedule I have made. | ____ | ____ | ____ |

Check any that apply:

When I meet with a study group, the group members:
____ a. generally understand the unit better than I do.
____ b. generally don't understand the unit as well as I do.
____ c. generally understand things I don't; don't understand the things I do.

When I meet with my study group, we spend our time:
____ d. sharing questions which deal with material the test will cover.
____ e. covering areas in which group members are weak.
____ f. going over questions from old tests and quizzes.
____ g. going over questions in the textbook.
____ h. productively, on the business of the text.

TO IMPROVE MY STUDY MANAGEMENT SKILLS I NEED TO:

# TAKING THE TEST: ESSAY TEST

**WHAT** Writing an answer for an essay test is a highly complicated task. The student must:

- address the requirements of information sought
- use a process encompassing a variety of writing and thinking skills
- have a simultaneous awareness of the management concerns of balancing time with the task.

**WHY** The essay test requires that the student control a variety of tasks. Although this seems overwhelming, a task analysis yields a set of procedures which make the task more manageable. Students who are taught how to write the essay answer can concentrate on what to write, having already come to terms with how to write it.

**WHEN** Appropriate times for a teacher to cover procedures in taking the essay test would be a day or so before such a test is to be given or following the test (perhaps when papers are returned). Students can begin work on essay test techniques in the upper elementary (earlier if indicated by student readiness) and continue to develop these skills through high school.

**HOW** Steps for students:

1. Analyze the question and decide:
    - what information you must provide
    - what the question is asking you to do with that information.
2. Identify and organize relevant and specific information. Jot down ideas and begin to group them together, or decide the order in which you will be using them.

3. Write an answer which is complete, concise, and convincing (in legible writing).

# SAMPLE APPLICATION

## CONTENT:

Social studies

## GRADES:

Upper elementary

## ESSAY TEST

Working with a sample question, work through the following steps with students:

1. Read the question.
2. Underline the important words in the question - words which tell you what you should do in writing the answer.
3. Circle the words which should appear in the key sentence(s) of your answer.
4. Write what could be the key sentence(s) of your essay answer, using the key words (or substitutes for them) you have circled.

Kamehameha III

Identify a Hawaiian monarch who made important contributions to Hawaii and discuss those contributions.

Kamehameha III made several contributions to Hawaii during his reign.

5. Briefly jot down ideas which provide specific information for the key sentence(s) you have written.
6. How might these ideas be grouped? Refer back to the key sentence(s) if necessary.
7. Put a 1 next to ideas you will discuss first, a 2 next to the ones to be discussed second, etc. Draw a line through ideas you will not be using.
8. As you write your answer, write legibly. Don't recopy your answer. If you have time, use it to develop specific details instead.

② * land reform
- great Mahele
- common people could own land

① * British take over
- by George Paulet
- saved by Admiral Thomas
- Thomas Square

* ~~Queens Hospital~~

③ * Constitution
- written, formal
- first

ADDITIONAL IDEAS

1. As a review for an upcoming test, teacher- or student-generated sample questions can be used both to practice essay test techniques as well as to remind students of information to be covered on the test.

2. An essay test is a good way to see how well students can not only recall information, but also reorganize it. Some questions may ask them to go even further in applying the information or evaluating it. The words which indicate what should be done with the information (trace, discuss, summarize, compare/contrast, justify, etc.) should be words with which they are already familiar.

3. In addition to familiarizing students with a process in writing the essay answer, teachers can also help students by sharing with them tips on taking the essay test. The following list, representative of the kinds of ideas offered in various study skills publications (Armstrong and Lampe 1983, Davis 1984, Gilbert 1983, Rowntree 1983) is divided into two categories: one for the student who is beginning to develop a systematic approach to writing the essay answer, and a second for those who have a fair grasp of the process and are ready to incorporate more sophistication to the technique.

Teacher judgment is important in selecting which ideas students can more realistically be expected to handle when taking the essay test. Because inundating them with all tips (or even all tips in one of the columns) would be overwhelming for students, it is advisable that the teacher present ideas in manageable blocks.

## TIPS ON TAKING THE ESSAY TEST

### CONSIDER THESE FACTORS IN TAKING AN ESSAY TEST:

| At an introductory level: | At an advanced level: |
|---|---|
| • Always write something. | |
| • Plan your time. Use some time to think of ideas and organize them BEFORE you start writing. | • Do a brief skeleton outline after you have thought through some of the ideas to be included. Use about one-fourth of your time to do this before you begin writing. |
| | • Decide how much time you have for each question. When you reach the end of a question's allotted time, stop, leave a space (in case you have time to return to this question), and GO ON TO THE NEXT QUESTION. |
| • Write quickly and legibly. | • If possible, write on one side of the paper, on every other line. This will make it easier to add in, or change the order of pages if you have to. (This tip is particularly applicable to older students dealing with sophisticated essay questions.) |

### FOLLOW THIS BASIC PROCESS IN TAKING AN ESSAY TEST:

| At an introductory level: | At an advanced level: |
|---|---|
| • Read the question carefully so you know exactly what you have to do in the answer. | • Read each question carefully for:<br>- what information you need to provide<br>- how you are being asked to present that information. |
| • Briefly write ideas you may be able to use. Use arrows or numbers to show how you will organize as you begin writing. | • Look carefully at the wording of question to see if a suggested organization of the answer is there. |
| • Write to the point. Use a pattern of general, main ideas supported by specific details. | • Word your general, main ideas so it is immediately apparent you are answering the question. |

At an introductory level:

At an advanced level:

**IF YOU HAVE A FEW MINUTES LEFT WHEN YOU ARE DONE, USE THE TIME TO REREAD QUICKLY TO MAKE SURE THAT:**

- Your answer reads smoothly, says what you want it to.
- You haven't misspelled words, that appear in the question.
- Your punctuation is correct.

- Your words express your ideas clearly.
- Your paragraphs are in the order in which you want them.
- Grammatical errors are corrected.

# TAKING THE TEST: TEST-TAKING TECHNIQUES

**WHAT** Test-wise students know more than the material the test covers. They know the strategy and approach with which they can take the test.

**WHY** By developing skills in taking tests, students are able to better remove themselves from the possibility of knowing the right answer but giving the wrong one. This is beneficial for both students as well as teacher: the student is able to exhibit optimum performance; the teacher is afforded an accurate assessment on content mastery.

**WHEN** Any student who is about to be placed in a test situation is ready to listen to advice in taking a test. For the primary grade student, the pieces of advice will probably be most meaningful if they are kept general, growing increasingly more specific as the student grows older.

Strategies can be presented to students:

- prior to the test
- upon return of the corrected test
- within the test situation (with teacher-created tests) when specific strategies can be mentioned without ethical concerns of over-prompting.

**HOW** Steps for students:

1. Read the test directions carefully.

2. Read the test item carefully.

3. Be aware of the time factor and other critical points (i.e., wording, length of phrases).

4. Apply a strategy which fits the situation.

5. Mark the answer sheet/write in the answer.

## SAMPLE APPLICATION

**CONTENT:**

All areas

**GRADES:**

Upper elementary - secondary

### TEST-TAKING TECHNIQUES

1. Go over the following with your students as techniques are appropriate to student needs and to the tests they will be taking. The points under "general strategy," however, should be covered with everyone.

2. This list is not intended to be comprehensive; however, it is representative of the kinds of tips found in various resources on study skills and test-taking (Armstrong and Lampe 1983, Burkle 1980, Davis 1984, Feder 1979, Gilbert 1983, Rowntree 1982).

**GENERAL STRATEGY** (applicable to various exam formats)

| At an introductory level: | At an advanced level: |
|---|---|
| • Read directions carefully. | • Look in the directions for:<br>- how much each section counts toward overall exam score<br>- suggestions on approaches, procedures to completing forms<br>- possible differing instructions for different sections (i.e., synonyms in one section, antonyms in the next). |
| • Do easiest items first. | • Look for possible clues to difficult items in other parts of the test. |
| • Read test items carefully. | • Be sure you understand what the question is asking. If you're not sure, try to "translate" or rephrase the question into terms you can understand. |
| • Be aware of the time factor. | • Skim the test to see what will be required of you. This will allow you to make a rough schedule to complete the test. |
| • Don't spend too much time on one question. Keep going. | |

- Set deadlines in your mind for each section.
- Save a little time to go over your work by checking if the marks you made are clear or if the words you wrote can be read.
- Be alert for test items which give you information for other questions on the test.
- Allot time for each section based on:
  - how much each section is worth (more time for portions which count more)
  - more time for essay than objective portions.

**WHEN TAKING A MULTIPLE CHOICE TEST:**

At an introductory level:

At an advanced level:

- Read the stem to identify what is being asked.

After you have done the easier items, go back to the difficult ones and:

- Eliminate wrong answers.
- Guess:
  - after you have ruled out choices
  - when you have a hunch about one of the remaining choices.
- Locate distractors through:
  - only partially correct answers
  - absolute words (look carefully at choices which contain words like never, always, all, none, or choices which contain the sense of these words).
- DON'T guess on poor odds if the scoring format of the test penalizes you for the incorrect guessing (i.e., number correct items minus a fraction of number wrong items).

Some guidelines for guessing are:

- The correct answer will read smoothly and grammatically with the stem.
- Choices with qualifying words, (e.g., sometimes, few, several, probably) are good guesses.
- Right answers are often made longer by bits of specific information which make them more accurate and exact than the distractors.

## WHEN THE MULTIPLE CHOICE QUESTION DEALS WITH A PASSAGE TO BE READ:

| At an introductory level: | At an advanced level: |
|---|---|
| • Skim the passage. | • Skim for:<br>- main idea<br>- tone of passage<br>- rough idea of location to types of information. |
| • Read stem to see what question is asking. | |
| • Reread portion of the passage needed to answer the question. | • If you have a question asking for a title or main idea of the passage, answer other questions pertaining to the passage first. |

## WHEN A MATHEMATICAL PROBLEM IS IN A MULTIPLE CHOICE QUESTION:

| At an introductory level: | At an advanced level: |
|---|---|
| • Read the problem quickly. | |
| • Reread to find the details you need. | • As you locate the details you need, eliminate those which are extra. |
| • Check your work. | • Check by testing your answer against the conditions described in the problem. |

## WHEN TAKING A MATCHING TEST:

| At an introductory level: | At an advanced level: |
|---|---|
| • Read directions carefully. Skim the test to see if each item is to be used only once. | • If the directions do not tell you, try to determine the relationship between the two columns. |
| • Work down each item in one column. | • If the test has about the same number of items in both columns, work down the column with the longer items. |
| • Match the easy items first. | |

(NOTE: If you know ahead of time that the test's format will be matching, reorganize study material into paired words, ideas, etc.)

**WHEN TAKING A TRUE-FALSE TEST:**

| At an introductory level: | At an advanced level: |
|---|---|
| • If there are any false parts, the statement is false. | |
| • Look for key words (e.g., always, only, all, never, frequently, usually, often) and what they do to the meaning of the sentence. | • Decide if the key words have a sense of IN ALL SITUATIONS (always, all, only, never)or MOST/SOME OF THE TIME (frequently,usually, often, few, several). |

**WHEN TAKING A COMPLETION OF FILL-IN-THE-BLANKS TEST:**

- Write your answer so it:
    - reads smoothly with the rest of the sentence
    - is clearly apparent that it answers the question asked.
- Think about information you are expected to know for this test.

# SAMPLE APPLICATION

**CONTENT:**

Language arts

**GRADES:**

High school

**MATERIAL:**

Text, information from lectures, notes, class discussion on "The Glass Menagerie"

## TEST-TAKING/MULTIPLE CHOICE

Use a sample item dealing with either general knowledge or information currently studied to illustrate a particular strategy.

SAMPLE ITEM: a tennis game : tennis balls :: language :: ____

a. listeners
b. words
c. spelling rules
d. satisfaction

Strategy: Translate or rephrase the question into terms you understand. When the test item involves an analogy, the rephrasing should be a sentence which:

- replaces the "___is to ___ as ___is to ___."
- establishes the relationship between the given pair
- is identical for both parts of the analogy

For the example given above:

"A tennis game is to tennis balls as language is to ___" is replaced with "We use tennis balls to participate in a tennis game as we use ___ to participate in language."

(From *The Survival Kit*, Hawaii English Program - Secondary. Honolulu: Department of Education, 1977.)

SAMPLE ITEM: "The Glass Menagerie" is an appropriate title for the play because

a. Amanda sees Laura as a breakable creature.
b. each member of a collection of characters carefully nurtures a fantasy world of escape, suggesting the fragility of their worlds.
c. Laura has a collection of glass animals.
d. Tom sees his mother and sister as phonies.

Strategy: Right answers are often made longer than the distractors with bits of specific information which make them more accurate and exact than the distractors.

## SAMPLE APPLICATION

### CONTENT:

Social studies

### GRADES:

Upper elementary-
junior high

### MATERIALS:

Student materials on
Hawaiian culture or riddles

### TEST-TAKING/MATCHING

Directions:
1. Read the riddles in Column I.
2. Find the best answer in Column II
3. Write your choice for each riddle number.
4. You can use an answer more than once.

COLUMN I

1. A lau a lau ke ālinalina,
   ho'okahi nō 'opihi kō'ele.
   Many small shell fish, one large shellfish.
2. Ku'u kapa hāli'i mau.
   My garment, always spread out.
3. Puka kini, puka kini ho'ikahi nō puka e komo ai.
   Many holes, many holes but one to enter.
4. Lu'u a ea, lu'u a ea, ua po'ohina.
   Dive and come up, dive and come up, the head is gray.
5. Ipu pākākā. Po'i pākākā. 'Alihi "ula'ula. Kōkō helele'i wale. He aha ho'i kēia?
   The large calabash. The large cover. The red edge. The calabash net that falls down.
6. Ku'u 'umeke pākākā.
   My large calabash.

COLUMN II

A. The earth
B. A finger of poi
C. The sea
D. Moon and stars
E. Fish net
F. Sand on the beach
G. The earth. The heaven. A rainbow. The falling rain.

STRATEGIES: Work down each item in one column. If the test has about the same number of items in both columns, work down the column with the longer items. In this case, work down Column I. This way, you will be rereading the shorter items in Column II instead of the riddles and their translations in Column I.

(Lesson taken from *Survival Kit*, Hawaii English Program-Secondary. Honolulu: Department of Education, 1977.)

# LEARNING FROM THE TEST

**WHAT** After having prepared for a test, taken the test, and received the scored test, students are in a position to learn from the test through an evaluation of their own performance (Armstrong and Lampe 1983, Marshak 1979). Students should consider what they did before the test and what they did during the test to weigh actual test performance.

**WHY** This examination of "where-I-went-wrong" is a step towards avoiding similar mistakes in the future. The student can then explore ways to modify study procedure and test-taking technique to improve test performance in the future.

**WHEN** When there are short lapses of time between students' studying for a test, taking the test, and the return of scored tests, student self-examination of test performance is appropriate. Students in the primary grades should begin with consideration of fairly general items in test-taking strategies, moving towards more specific and sophisticated strategies in the upper grades.

**HOW** Steps for students:

1. Skim over errors made after receiving a corrected test.
2. Analyze errors to identify the source of the problem.
3. Make plans to modify procedures in study or test-taking as suggested by the error analysis.

## CONTENT:

All areas

## GRADES:

Upper elementary - secondary

## MATERIALS:

Completed test, checklist on learning from the test

## LEARNING FROM THE TEST

After a scored test has been returned, instruct students to:

1. look at the errors they have made.
2. determine why the errors were made. (The teacher may pose questions which focus on specific sources or errors, or students may work individually, using a checklist. See sample checklist on next page.)
3. identify what they can do in the future to avoid making the same errors again.

Name:____________________

Test:____________________

Date:____________________

## CHECKLIST: LEARNING FROM THE TEST

I. Did you make errors because you didn't know the information the questions were asking? If yes, check items which apply:

___ 1. Was the information in reading assignments?
___ 2. Was the information discussed in class?
___ 3. Was the information contained in films/pictures viewed in class?
___ 4. If the information should have been in your notes, did your notes cover the topic to a sufficient degree?

HOW CAN YOU AVOID MAKING THESE KINDS OF ERRORS IN THE FUTURE?

II. Did you know the information the questions were asking, but got them wrong, anyway? If yes, check items which apply:

___ 1. Did you run out of time?
___ 2. Did you fail to read or did you misread the directions?
___ 3. Did you miss an important part of the question?

If you checked 2 or 3, choose 2-3 questions from the test, and explain why the part you missed or misread was important.

HOW CAN YOU AVOID MAKING THESE KINDS OF ERRORS IN THE FUTURE?

# ADDITIONAL NOTES TO TEACHERS

The teacher can strengthen students' test-taking skills by attending to the following areas:

- Test-anxiety: particularly in the lower grades some test-anxiety can be reduced by ensuring students' familiarity with the test environment and test conditions. They should be told ahead of time what to expect, materials they will need, general length of test, format of the test (Rawl 1984).

- Reassurance that test anxiety is natural may also be helpful. Talking with students about downplaying negative thoughts and replacing them with positive ones and about relaxation techniques work towards easing jittery students (Divine and Kylen 1979, Florida State Department of Education 1981).

- Testing formats: familiarity with a variety of test formats helps the test-taker (Rawl 1984). After deciding on the content of the test, the teacher has numerous considerations in selecting an appropriate format. Some guidelines are:

    - Use the essay format if students need to not only provide information, but also to organize and offer insights on it.

    - Use the objective format taking into account students' reading comprehension levels.

    - Prepare objective items which include important information from the content being tested, with one answer being clearly the best.

    - Consider teacher skill in writing items for a particular format.

    - Avoid ambiguity in items. This works against gaining valid indicators of student mastery.

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# NONBOOK RESOURCES

This bibliography will provide you with a list of nonbook resources which can be used to support study skills instruction. It is recommended that you check with your school librarian to see if some of these, or similar materials, are available at your school. We have put an asterisk (*) by the 16mm film titles that are currently available from the Audiovisual Services Unit film library. These 16mm films may be requested through the regular film request procedures.

## COMPUTER SOFTWARE PROGRAMS

"Homeworker." Davidson and Associates, 1986 (J-H)

> For students who wish to organize their homework using six integrated modules: outliner, word processor, flash card maker, calendar, grade keeper and calculator. The classroom edition contains all of the above plus additional disks.

"How Can I Find It If I Don't Know What I'm Looking For?" Sunburst, 1985. (E-J)

> Listed in *Booklist*'s "Software's Greatest Hits: 1985," this program by Ann Lathrop provides students with instant answers to a variety of reference questions. Program allows librarian/teacher to customize the program to include reference materials in a particular school library.

## 16MM FILMS

"Study Makes the Grade." Barr Films, 1985. (E-J)

> Bill Cosby's Fat Albert and the gang help Dumb Donald study for his math exam. Even while trying to improve his study skills, Donald faces a moral decision--should he accept a stolen copy of the exam from Owen? Donald makes the right decision and learns the value of learning over just passing. The film's message is low-key and convincing.

*"Study Skills: Note-Taking and Outlining." Alfred Higgins Productions, 1984. (E-J)

> Imaginative approach helps show the student how to take the main ideas from various sources of information and write them in note form. The film also shows how to organize these notes in outline form and demonstrates why this can be useful, not only in evaluating the student's information, but also in aiding him to turn it into a clear, concise report.

*"Study Skills: Organize It!" Alfred Higgins Productions, 1985. (E-J)

> In a creative and amusing manner, the concepts of organization, from basic everyday examples to those needed in classwork, are demonstrated. Shows how they are especially important in communication, whether it be in writing, group projects, or oral reports.

*"Study Skills: Researching and Writing a Report." Alfred Higgins Productions, 1985. (E-J)

> With the help of a cleverly programmed robot, the necessary steps in creating a report and the reasons they're important are explained. Students learn to combine various skills: how to select a topic, research and gather information, organize notes, and write the report in a clear and appealing form.

*"Study Skills: Take That Test." Alfred Higgins Productions, 1984. (E-J)

Using humor that will appeal to students, points covered include: developing good study habits, learning to follow and understand directions; intellectually answering multiple choice, true-false, and essay questions; planning one's time in relation to the test; and appropriately responding if stumped.

*"Studying--A Way to Learn." Barr Films, 1985. (E)

Mr. Rigby gives his students a crash course on how to study when he finds them unprepared and inattentive. He tells them to: develop an interest in the subject; pay attention and avoid distractions; come prepared with notebooks, paper, and pen; and don't ever by afraid to ask questions.

## SOUND FILMSTRIPS

"Fundamentals of Listening for Primaries." Eye Gate, 1981. (P-E)

Presents what listening involves and how to develop listening skills. Since the series presents a variety of information, the teacher will need to extract appropriate sections.

"Learning More/Scoring Higher." Listening Library, 1981. (E-J)

Shows strategies for gathering and using information including outlining and note-taking. Useful for students who already know the basics of research but who need review.

"Nystrom Reading for Content -- Level C." Nystrom, 1981. (H)

Teaches how to read various types of textbooks effectively. Strategies and knowledge necessary are carefully explained in the areas of science and social studies. The pacing is somewhat slow but may be appropriate for remedial purposes.

"Study Skills: Guide for Survival." Educational Dimensions, 1982. (J-H)

Looks at basic skills needed for school success. The use of practical examples adds to the strength of the sound information. Emphasis is placed on setting a balance between work and play. The program includes a good range of topics, including interpersonal relationships, motivation, and organization.

"Study Skills: Strategies and Techniques." Britannica, 1986. (J)

Study aids, study strategies, note-taking and outlining, and taking tests are covered in this four-part series. Contains student activity sheets.

"Tables and Graphs." Guidance Associates, 1981. (E)

Informative presentation on different types of graphs and tables. Visuals will need to be discussed by the teacher.

FILMSTRIPS ON VIDEO (Video format)

"Aids to Memory: Note-Taking Skills." Center for Humanities, 1987. (J-H)

Focus of this series is pattern recognition, such as chronology, cause/effect, compare/contrast, and organizing notes for maximum usefulness.

" Building Vocabulary." Center for Humanities, n.d. (J-H)

Word-attack techniques, such as using prefixes, suffixes, root words and context clues provide students with strategies to determine the meaning of unfamiliar words.

"Effective Study Techniques." Center for Humanities, n.d. (H)

Techniques that will help students prepare for objective and essay tests are the focus of this four-part series.

"How to Study Effectively." Center for Humanities, 1985. (J-H)

This six-part series shows students how pre-reading skills, note-taking, summarizing as well as time management skills will help them study smarter.

"How to Use Your Time Better and Improve Your Grades." Center for Humanities, n.d. (H)

Effective use of time, listening skills, and note-taking skills are among the strategies highlighted in this two-part series.

"Note-Taking and Outlining Skills." Center for Humanities, n.d. (J-H)

Practical systems for classifying information and note-taking are demonstrated in this series; includes making simple lists, comparison/contrast, cause/effect and previewing text material. This series won a *Learning Magazine* Audiovisual Award.

"Putting Ideas in Order: Outlining Skills." Center for Humanities, 1987. (H)

On-screen exercises help students practice forming an outline from notes.

"Understanding the Main Idea and Making Inferences." Center for Humanities, n.d. (H)

Excerpts from well-known literary works are used so that students can practice finding the main idea. Winner of *Previews* "Best of the Year" Award.

"Using Clue Words to Unlock Meaning." Center for Humanities, n.d. (H)

This series includes 30 student activity booklets to help students recognize patterns, time sequences, and cause/effect relationships.

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